

Recovery and Identification of the Missing after Disaster: Case Studies, Ethical Guidelines and Policy Recommendations

Ethics, History, and Public Policy Project Course

Fall 2011

Huma Ali
Nancy Brown
Lydia Chiro
Emily Dillinger
Emily Droder
Julia Hanby
Neha Mittal
George Nardi
Mikaela Rakos
Brice Relaford
Maggie Soderholm
Jennifer Tharp
Jacob Yosafat

Instructors:
Jay David Aronson
Alex John London

Acknowledgements

We would like to thank a number of people who helped us with this research paper, without whom we would have been unable to provide adequate guidance regarding post-disaster identification.

Kristy Wright, for her insight and firsthand account of identification efforts in Thailand. She provided background on the stakeholders in post-disaster situations that helped guide our policy recommendations.

We are also grateful for the opportunity to observe the 2011 *Workshop on the Ethics of Post-Conflict and Post-Disaster DNA Identification* hosted by the Carnegie Mellon Center for Human Rights Science.

Finally, we would like to express our warmest gratitude to Jay D. Aronson and Alex John London, for their encouragement and advice throughout the semester. They structured our capstone course in such a way that we were introduced to the topic without any previous experience, researched specific case studies, and formed our own arguments with confidence. Without these two knowledgeable and supportive professors, this capstone project would not have been possible.

Contents

ACKNOWLEDGEMENTS	2
INTRODUCTION	4
1.0 HOW POST-CONFLICT RELATES TO POST-DISASTER	7
2.0 CONSIDERATION FOR THE LIVING	10
2.1 PSYCHOSOCIAL ASPECTS OF LOSS	11
2.2 IMPLICATIONS OF AMBIGUOUS LOSS	11
2.3 DUTIES: INDIVIDUALITY AND DIGNITY	13
2.4 RELIEF EFFORTS AND RESPECTING THE DIGNITY OF THE LIVING	19
2.5 PREVENTING AND CORRECTING EFFECTS OF AMBIGUOUS LOSS	20
3.0 CONSIDERATION FOR THE DEAD	23
3.1 RESIDUAL DIGNITY AND RESPECT FOR THE DEAD	25
3.2 RELIEF EFFORTS AND RESPECTING RESIDUAL DIGNITY	26
3.3 WHY A DUTY-BASED JUSTIFICATION?	27
4.0 POLICY SUGGESTIONS	27
4.1 A PERMANENT DISASTER VICTIM ORGANIZATION	29
4.2 PROPOSED STRUCTURE	30
4.3 COORDINATING DISASTER RESPONSE	32
4.4 DETERMINING INTERNATIONAL STANDARDS AND SUPPLIES FOR TREATMENT OF THE DEAD	33
4.5 EXPLANATIONS OF DIFFERENT FORENSIC TECHNIQUES	35
FORENSIC IDENTIFICATION	35
SECONDARY METHODS OF IDENTIFICATION	36
DENTAL ANALYSIS	38
STR ANALYSIS: IDENTIFICATION THROUGH DNA	39
4.6 THE EXTENT OF IDENTIFICATION: UNEVEN ACCESS TO DNA TECHNOLOGY	39
4.7 POLICY SUGGESTIONS FOR PSYCHOLOGICAL COUNSELING	41
4.8 NATURAL DISASTERS AND THE LAW	43
CONCLUSION	46
BIBLIOGRAPHY	47

Introduction

This report will focus on the recovery, identification, and burial of missing people in the aftermath of natural disaster. There is a relative lack of scholarship on the missing in disaster situations. In contrast, there is extensive literature about the missing victims of social conflict. In the wake of disaster, states and response teams primarily focus on the immediate needs of the living, often at the expense of respectful treatment of the dead. Motives for identifying victims differ in post-disaster and post-conflict situations. This report will explain why it is important to treat the dead with respect and how the dead should be handled in the aftermath of a disaster.

After a natural disaster, affected communities face psychological, economic, and social obstacles. International assistance in disaster zones is often crucial for supporting the needs of victims and their families. Recovery and identification of the missing are important for several reasons. First, they reveal the fate of victims and provide information about government negligence that may have contributed to the magnitude of the disaster, thereby allowing the community to move toward social goals of truth and accountability. Second, the nature of civic response efforts reflects the values that a society places on its citizens and fellow human beings. Whether or not victims receive equal consideration, regardless of race, gender, or other variables, reflects community values and capabilities. Third, uncertainty about the fate of missing persons causes emotional suffering among survivors. Governments coping with disaster situations should direct relief efforts towards reestablishing connections between citizens and societies by fostering a support network for survivors and their families. After disaster, identification of bodies and psychological services are necessary to alleviate the social crisis of disaster.

All of these efforts serve to respect the dignity of the living and dead. Our argument in favor of identifying the missing in the wake of natural disaster rests on respecting this dignity, which is the inherent worth of a person. Dignity exists in both the living and, in a more limited sense, the dead. Living people have dignity in the fullest sense because they fully possess both parts of individuality: personhood (agency) and identity. Each human uses his or her agency, or self-determination, and identity to shape a unique life. The dead do not have dignity in the fullest sense because they can no longer make decisions. However, the dead still retain individuality because of their distinct identity. The emotional relationships the living maintain with their

memories of the dead demonstrate that the dead still have individuality. This derivative moral status, or “residual dignity” that the dead retain, commands recognition and respect through a minimum standard of consideration. We will advocate a minimum standard of consideration for the treatment of the dead, which requires that governments and other actors respect the missing and the relationships that the living have with the dead. This minimum standard includes identification when resources are available. When immediate identification is not possible, burials should allow for future identification. When these standards are met, the surviving community can have access to the remains of their loved ones and be assured that the missing are respected as individuals.

Chapter One provides a comparison of post-conflict and post-disaster motivations for recovering and identifying the dead, drawing upon the cases of the 1995 genocide at Srebrenica, the 2010 Haitian earthquake disaster, and the 2004 Thailand tsunami. We identify three motivations for identifying the missing after a conflict: accountability, preservation of national and international reputation, and respect for the living and the dead. While accountability and the safeguarding of reputation can also motivate identification after natural disasters, both motives are more conspicuous in post-conflict contexts. Despite this, the recovery and identification of victims out of respect for the living and the dead are equally important in post-conflict and post-disaster situations. The comparison of these two situations strengthens our argument for a minimum standard of consideration for the dead, which respects both the dignity of the living and the dead.

Chapter Two demonstrates the importance of identifying the dead to the surviving community. We will explain the concept of ambiguous loss, a psychological condition that affects many individuals who are uncertain of the fate of their missing loved ones. We argue that the identification of bodies and psychological services are necessary to prevent and treat this suffering. Providing families with a physical body or knowledge of the missing’s fate allows families to begin the mourning process. It gives families the opportunity to perform funerals and other rituals for the dead. An effective government response acknowledges that the relief of survivors depends largely on knowing the status of the missing. Chapter Two further explains our moral argument in favor of the identification of missing bodies, asserting that respectful treatment of the dead is necessary to uphold the dignity of the living.

In Chapter Three, we will consider the dignity of the dead. As aforementioned, the dead do not have dignity in the fullest sense, but a residual dignity. Nevertheless, we argue that this residual dignity commands recognition and respect through a minimum standard of consideration.

In Chapter Four we advocate a set of policies that ensures a minimum standard of dignity for the victims of natural disasters, and their surviving loved ones, in all cases. The state where a disaster occurs should have the primary responsibility for upholding the dignity of the living and the dead. If the state does not have the resources to uphold this minimal respect for dignity, it should reach out to the international community for support. The case studies of Haiti and Thailand illustrate successes and failures of emergency responses by governments and other actors in upholding dignity. We will briefly offer a summary of identification methods and current legal guidelines for the handling of remains. This report advocates several international and domestic policies regarding disaster recovery and standards for treatment of remains, including:

- Creating a permanent disaster victim organization that would coordinate all international community efforts;
- Determining international standards and necessary resources for the treatment of the dead;
- Building a mobile forensic lab; and
- Implementing psychological counseling for survivors and relief workers.

1.0 How Post-Conflict Relates to Post-Disaster

An analysis of the reasons for post-conflict identification provides insights into the norms for treatment of the dead that also apply to post-disaster contexts. After a conflict occurs, there are four primary motivations for identifying the missing: identifying who was accountable for the conflict, preserving national and international reputation, respecting the missing, and providing support for the living. These norms influence our later policy recommendations for post-disaster situations.

Accountability has a more defined role in post-conflict contexts because specific individuals, groups, or institutions can be blamed for acts of violence against citizens. After a conflict, if the host country is unable to investigate the crimes committed, then the international community often steps in to hold perpetrators accountable and to search for missing people. Identification is a key part of this process because it reveals the truth about the crime. To hold the guilty responsible, international criminal tribunals collect evidence to determine fault. For example, the International Criminal Tribunal of the former Yugoslavia (ICTY) stepped in to determine accountability following the 1995 genocide in Srebrenica.

The massacre in Srebrenica occurred on July 11, 1995 in the UN safe area by the Bosnian Serb Army.¹ Over 15,000 men and boys tried to escape through the forest, while the Bosnian Serb Army transported 25,000 women and children from the Srebrenica enclave to the front lines. 8,000 men and boys were murdered by the Bosnian Serb Army in what came to be considered a genocide. In all, over 40,000 people were missing after the conflict. The tragedy in Srebrenica was part of a larger conflict. In November 1991, Bosnian Serbs voted to remain part of Yugoslavia. Bosniaks and Bosnian Croats, however, voted in favor of independence. On April 6, 1992, the European Community recognized their independence and violence began shortly thereafter.² The Serbian government considered the Podrinje region (Srebrenica's location) central to establishing a Serbian entity beyond the Drina River.³ April 18, 1992 was the first attack on Srebrenica, and on May 9, the Bosnian army recaptured the city. After this attack,

¹ Wagner, 3

² Wagner, 26

³ Ibid

Srebrenica soon became the home of thousands of refugees fleeing the violence. In 1993, the United Nations finally recognized the situation and declared Srebrenica a safe area.

In July 1995, the Bosnian Serb Army surrounded Srebrenica and killed the 8,000 Bosniak men and boys. Their remains were later found in mass graves, some of which showed signs of being reburied multiple times. Traditional means of identification, such as dental records or the recognition of clothing by families, had limited success because remains were badly comingled. The International Committee on Missing Persons (ICMP), which was formed by support from the United States and the Dutch government, initiated DNA identification efforts in Srebrenica. By 2010, over 6,000 remains were successfully identified and returned to their families.⁴ One of the initial reasons identification began was to hold the Bosnian Serbian military leaders accountable, which was why the ICTY was initially created. Ultimately, the ICTY found the Bosnian Serb military commanders guilty. One condition of Serbia's later membership in the European Union was the turnover and arrest of General Ratko Mladic, the Bosnian Serb general who committed grave human rights abuses.⁵ By establishing their presence after the conflict, the ICTY made aggressors realize that they would be held accountable for their actions.

This concept of accountability is one of the key differences between post-conflict and post-disaster situations. Violence is intentional in conflicts, whereas death is not premeditated during natural disasters. However, the number of deaths due to natural disaster can be higher than necessary due to government negligence. At the same time, it is impractical to hold a government legally accountable if it fails to create a contingency plan to protect people and thereby preserve their dignity. For example, the weak economy, poor building codes, and corrupt government of Haiti prevented an efficient response after the 2010 earthquake, but the government could not be held legally accountable for these flaws. Accountability in post-disaster contexts is often unclear, so bringing those responsible to justice is not always feasible.

⁴"Srebrenica massacre." *Encyclopædia Britannica. Encyclopædia Britannica Online Academic Edition.* Encyclopædia Britannica Inc., 2011. Web. 22 Nov. 2011. <<http://www.britannica.com/EBchecked/topic/1697253/Srebrenica-massacre>>.

⁵ ICTY Media Office, "Tribunal Welcomes the Arrest of Ratko Mladić," *ICTY Press Releases*, United Nations International Criminal Tribunal for the Former Yugoslavia, 26 May 2011, <<http://www.icty.org/sid/10671>>.

Governments and organizations are often motivated to identify the missing so as to safeguard their national and international reputations. For example, before the genocide occurred in Srebrenica, the United Nations had declared Srebrenica a safe area, but that did not stop Bosnian Serb forces.⁶ The detriment of this failure to the reputations of the United Nations and other international actors compelled them to fund the recovery and identification of the missing. The United States, under the leadership of President Clinton, established and funded the International Commission on Missing Persons (ICMP) to use DNA technology for the identification of the victims. In this way, the US and Dutch governments, who also funded the ICMP, used identification to atone for the inaction that allowed for the fall of the UN “safe area” and the systematic execution of the Bosniaks.⁷ International and national reputation can also provide motivation in disaster recovery, although it is more difficult to determine which groups hold responsibility and should take action. The rapid response of the international community to the tsunami in Thailand, for instance, partly resulted from the presence of tourists among the victims and countries’ obligations to these citizens.

On the morning of December 26, 2004, an earthquake of magnitude 9.15 produced a tsunami off the coast of Sumatra, Indonesia. The waves traveled thousands of miles, striking multiple countries in South Asia and parts of Africa. Rapid response warning systems in most of these poor nations were either non-existent or simply ineffective, so very little could have been done in terms of immediate prevention.⁸ The tsunami arrived in a series of waves, during which the waves would retreat and advance in cycles of thirty minutes between each peak. In fact, the disaster consisted of three distinct tsunamis, which in the case of Thailand were 6-7 meters, 10 meters, and 5 meters high, respectively.⁹ As a result of the disaster, casualties are estimated at 5,395 confirmed dead from 44 countries, as well as 2,817 people missing. Apart from the human losses, the tsunami also took a toll on Thailand’s societal and economic structures. The disaster acutely affected vulnerable fishing communities, ethnic groups, migrant workers, and the tourism

⁶ Wagner 3.

⁷ Ibid. 265.

⁸ Jayasuriya, Sisira, and Peter McCawley. *The Asian Tsunami, Aid And Reconstruction After A Disaster*. Cheltenham, UK: Edward Elgar Publishing, 2010.

⁹ United Nations. United Nations Thailand. *Tsunami 2004 and Its Impact*. 2008. Web. <<http://www.un.or.th/tsunamiinthailand/Tsunami2004anditsimpact.html>>.

industry. 407 communities were impacted, with 47 completely destroyed, which naturally resulted in a loss of livelihoods for the affected inhabitants. Many children were left to suffer the loss of their parents or guardians, while the survivors suffered from ambiguous loss.

As we will develop in the paper, relief for ambiguous loss involves treating the living and the dead with respect. This is another motivation for recovering and identifying the missing in both post-conflict and post-disaster contexts. For example, after the massacre at Srebrenica, the surviving community demonstrated a need for the recovery, identification, and memorialization of the dead. For instance, women mobilized and formed the Women of Srebrenica, an organization advocating for the identification of the missing.¹⁰ Moreover, after the Thailand tsunami, the Thai government deployed disaster victim identification (DVI) teams that made an effort to identify all the remains and return them to their communities. Those that were not identified were buried in a manner that would allow for possible future identification, and the bodies underwent funeral rites compatible with the major religions in Thailand. Although they were not able to identify the bodies at that moment in time, they buried the bodies in a respectful manner.

Providing support for the living is a final significant motivation for recovering and identifying missing bodies. Not knowing the fate of a loved one can interrupt daily life for a survivor and suspend the mourning process. This is evident in the case of Hajra, a mother of two sons who were killed in the Srebrenica genocide. She would turn away or grow silent whenever someone mentioned her missing younger son.¹¹ This reaction to painful memories and uncertainty shows the importance of providing relatives with knowledge of the fate of their missing. Most families chose to bury the identified remains of their loved ones at the Srebrenica-Potocari Memorial Center: a communal, commemorative space that allowed the surviving community to recognize their individual and collective loss and memorialize the victims of the massacre.¹² In this report, we will expand on the need to identify the missing in order to respect both the living and the dead in the wake of natural disaster.

¹⁰ Ibid. 5.

¹¹ Ibid. 69-70.

¹² Wagner 213-214.

2.0 Consideration for the Living

In this chapter, we will discuss ambiguous loss and its effects on the dignity of the living. A person may face ambiguous loss when a loved one is missing and his or her fate is unknown. With the missing person neither fully absent nor fully present in the minds of surviving family members, they are forced to live in a constant state of ambiguity concerning the status of their loved one.

2.1 Psychosocial Aspects of Loss

Ambiguous loss can arise under two scenarios: when a person is physically missing or psychologically missing (the person is not present either emotionally or cognitively).¹³ In post-disaster contexts, an individual suffers from ambiguous loss most often due to a physically missing loved one. This causes both psychological problems and structural problems that inhibit the individual from living life in the fullest sense.¹⁴ Structural problems refer to a variety of societal and legal complications, which we will discuss in more detail later in this section. Ambiguous loss occurs in both in post-disaster and post-conflict situations and demonstrates the importance of identification and policies that preserve the dignity of the living.

2.2 Implications of Ambiguous Loss

Ambiguous loss prevents an individual from functioning in the fullest sense because it causes suffering and impedes the exercise of agency. When an individual suffers from ambiguous loss, he or she experiences excessive mental anguish and suffering because the status of his/her loved one as dead or alive is unknown. Without a body to bury or initiate cultural practices that honor the dead, the individual's suffering can be prolonged and heightened. Furthermore, his/her ability to exercise agency is impaired because he or she is unaware of his loved one's condition. An individual exercises agency by envisioning his future and taking steps toward shaping his own life. Without confirmation of the loved one's death, the individual may be unable to make important decisions that shape his future.

¹³ Boss, Pauline, "Ambiguous Loss Research, Theory, and Practice: Reflections After 9/11," *Journal of Marriage and Family*, 2004, 66 (3): 551.

¹⁴ Ibid.

A person can also suffer from structural problems such as economic and social issues as a result of ambiguous loss. For example, suppose that a woman's husband is missing after a hurricane. In addition to the emotional stress of not knowing whether her spouse is dead or alive, the woman will begin to question her personal status in society. Whether or not she is considered a widow will impact her taxes, property ownership, and ability to remarry. Furthermore, an individual suffering from ambiguous loss is denied the common markers that define a period of mourning or honoring of the dead. After years without word about the missing, one may assume that he or she is dead. However, without a body to confirm the death, the surviving community may be denied a death certificate or burial.

Those who do not have the remains of their loved ones are also unable to bury the dead or perform traditional customs, which are often necessary steps in the mourning process. While customs vary between cultures, there is usually some sort of recognition that takes place to honor the memory of the dead. In ritualizing the dead, communities undergo mourning together. Communities assert the value of their members by providing a network of social support. Within it, people feel valued and respected. Communities come together so that individuals are not left to cope on their own. While this type of community mourning would otherwise be part of the normal cycle from life to death, as regulated by religion and culture, it is disrupted by natural disasters that leave victims unidentified.

A person suffering from ambiguous loss faces multiple psychological challenges. Because the living are forced to live with no answers concerning the status of their missing loved ones, they are likely to suffer from anxiety, guilt, and make little progress in grieving or coping.¹⁵ In the aftermath of the tsunami in Thailand, Somchai Chakrabhand, the head of the Mental Health Department, concluded that 20% of the survivors were strongly affected and displayed symptoms such as an obsession with waiting for the return of their loved ones.¹⁶ Identification of the dead can bring clarity to the surviving community so that survivors can finally recognize the death of their loved ones.

¹⁵ Boss 554.

¹⁶ "Tsunami Thailand, One Year Later," National Response and Contribution Of International Partners, 30.

While all survivors may not have personal relationships with the missing, they identify with them because they maintain ties to the same community and share a common experience of being affected by the disaster. Although a survivor may not personally know a missing individual from his community, the survivor would hope that he returns to home safely during the aftermath of the disaster or feel sympathy if the missing person was reported dead. Inability to recognize and cope with loss impedes a community's ability to move forward and rebuild. Furthermore, if government negligence surfaced in the event of the disaster in where the institution failed to uphold the dignity of the living and the dead, distrust of the government will hinder the community's ability to cope with its past and envision its future.

Ambiguous loss does not affect all people equally. Inherent personality traits, beliefs in destiny, and trust in a higher power all influence the degree of suffering. Researcher and therapist Pauline Boss found that those who are accustomed to having power and control over their own lives are particularly debilitated by ambiguous loss, while those who are accustomed to limited agency and control are more likely to accept ambiguity.¹⁷ In order to preserve the dignity of the living in post-disaster contexts, it is necessary to find ways to prevent and alleviate the negative effects of ambiguous loss that are appropriate and effective for all cultures and access to resources. However, in order to understand why we need to correct and prevent ambiguous loss, we need to understand the concept of dignity and its fundamental importance to all human beings.

2.3 Duties: Individuality and Dignity

Respecting dignity is a duty that arises from the human right a living person has to create an

Western traditions prioritize the individual over the community, while other cultures focus on the collective society. Even still, those cultures, like in Africa and East Asia, acknowledge the human as an individual wanting to choose his life and character within the community. Cultures across the globe have diverse sets of obligations that respect human dignity and acknowledge its important role in individuality.

individual life, free of unwarranted harm. A human right is a claim to equal freedom belonging to all humans that protect basic needs for survival and the development of this

¹⁷ Boss, 559-560.

individual life. People all have the capacity to shape their own individuality, which distinguishes one person from another. In addition, people all have an inherent worth or dignity. However, if a person's dignity is not respected, he cannot exercise his individuality to its fullest potential. People desire to make their own choices, to act on their aspirations in order to attain what is important to them. The duty to respect dignity arises from the obligation to not cause unwarranted harm and the choices that contribute to the individuality of others.

Dignity is the equal and universal inherent worth of a person, recognized through social relationships. As an innate quality, it is central to shaping individuality.¹⁸ Because we live as individuals within a community it is important to recognize each other's dignity.¹⁹ Living humans have what we will characterize as dignity in its 'fullest sense' because of their capacity to shape and pursue an individual life of their choosing. Individuality is an expression of a person's uniqueness and intrinsic worth. In order for people to possess the fullest sense of dignity, a human must possess both elements of individuality: personhood and identity.

The feature that differentiates living human agents from other beings is personhood: the state of being an agent or having agency. Agency can be defined as the capacity of a living human to make choices and act upon them, or exhibit self-determination.

- **Personhood:** the status of living human beings; having the qualities that define personhood, which are rational thought, the capacity to have agency, and self-awareness.
- **Individual Identity** is the accumulation of characteristics that identifies an individual. It has three components: the genetic identity that comes from the unique genetic makeup of each human being; the personal identity that comes from the character shaped throughout a lifetime, and the social identity that comes from their personal identity being recognized through interactions with others.

In order to act autonomously, one would need minimum provisions or resources, such as information to make and act on a decision. One needs capabilities like logic, reasoning, and

¹⁸ Gaylin, Willard, "In Defense of the Dignity of Being Human," *The Hastings Center Report*, 14.4 (1984): *JSTOR*, <<http://www.jstor.org/stable/3561161>>, 19.

¹⁹ Nickel, James W., *Making Sense of Human Rights*, (Malden, MA: Blackwell Pub, 2007), Print.

moral capacities to act on personal choices. Finally, a person requires liberties or freedoms that permit acting on decisions and protect from wrongful interference.²⁰ Desires, needs, interests, and goals provide a person with a sense of purpose, a “conception of a worthwhile life,”²¹ that

Moral capacity is the ability and competence to make judgments and choices in reference to right and wrong.

people can achieve by exercising their autonomy. Without minimum provisions and liberties, autonomy cannot be exercised, and humans cannot forge an individual lifestyle. Autonomy is essential

to shaping individuality. In order to respect an individual’s dignity, we must respect their status as an autonomous person. In post-disaster contexts, to respect the dignity of the living as autonomous agents, governments should search for and identify the missing, and provide psychological services for the survivors. This will prevent further suffering and restore their confidence in their decision-making regarding their future.

Another component of individuality is identity. People are all unique individuals because of

Humans’ identities are composed of three unique aspects: biological, personal and social identity.

biology, the choices they make, and the relationships they develop. Each human identity is genetically unique and everyone has different strengths that display individuality.²²

Personal identity is a person’s individual character that is shaped by beliefs and experiences throughout his lifetime. Social identities are created when a personal identity is acknowledged through social interactions and relationships. Therefore, as members of a larger group, including all of humanity, people have distinct identities that make up part of their individuality, which means people should respect their dignity.

²⁰ Griffin, James, *On Human Rights*, (Oxford: Oxford UP, 2008) 56.

²¹ Ibid.

²² Jordan, Matthew C., "Bioethics and Human Dignity," *The Journal of Medicine and Philosophy*, Oxford Journals, <<http://jmp.oxfordjournals.org/content/35/2/180.full#xref-fn-12-1>> 183.

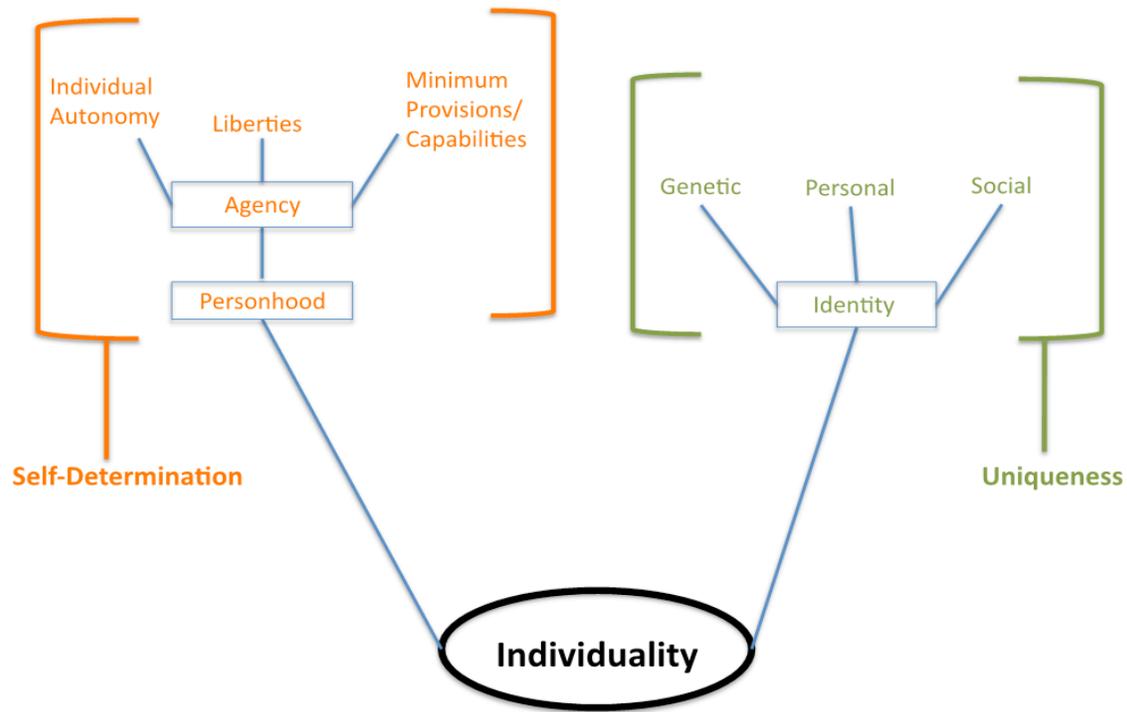


Figure 1: Components of Individuality

Because all humans have individual identities and moral personhood, they have equal moral value. This calls for respecting all people’s dignity by treating others with equal regard.²³ To start, all members of the human species share a common genome that is contained within 23 pairs of chromosomes. Although each individual’s genetic make-up is unique (this is what enables DNA identification), we share about 99.5% of our genome in common with all other

²³ "Respect," *Stanford Encyclopedia of Philosophy*, <<http://plato.stanford.edu/entries/respect/>>.

humans.²⁴ This sense of equal value as humans entitles people to an equal minimum level of consideration as living members of the same species. Mere biological humanness and species membership are not sufficient qualifications for having equal value as humans. This is because human value also arises from the development and exercise of human features such as autonomy, moral capacities, and reason. Human beings can develop such faculties and place value on them. Philosopher Immanuel Kant explains that humans have special capabilities and rationality that make them valuable. This requires people to treat others as ends in themselves. To treat a person as a mere means would make that person a disposable good as a tool in another person's agenda (i.e., a slave), rather than letting someone shape their life according to their own goals.

In acknowledging the inherent equal value in being human, people can recognize each other's dignity and individuality. This can be done through the formation of relationships. Although someone might feel a stronger connection to family and friends than to a stranger, this does not take away the distinct identity of the stranger, nor does it say that one person's value is greater than another's. A widespread equal value of that person as an individual exists within a larger group and that should be recognized.

²⁴ "Genetic Variation Program," *National Human Genome Research Institute (NHGRI) – Homepage*, <<http://www.genome.gov/10001551>>.

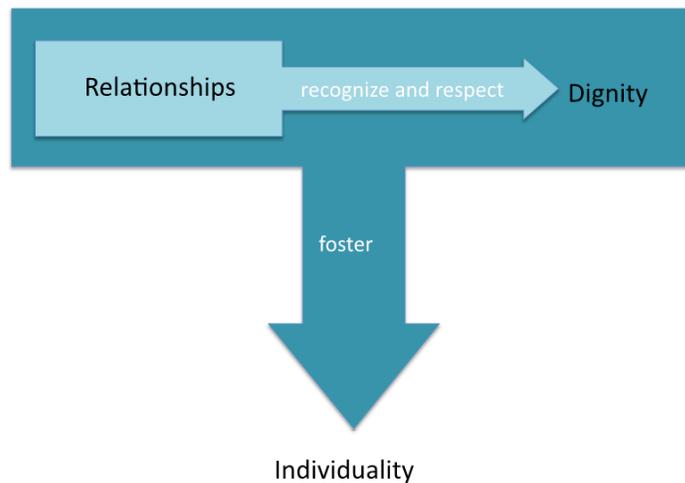


Figure 2: Relationships, Dignity, and Individuality

One instance where the government and response teams did not recognize this equal human value was the 2010 Haitian earthquake. It demonstrated a situation in which government response did not adequately address the needs of the living and mishandled the dead. On January 12th, an earthquake with a magnitude of 7.0 struck the island of Haiti, triggering a disaster that left 316,000 people dead and affected three million survivors. Facing the collapse of key buildings and deaths of numerous officials, the government failed to declare a state of emergency for six days.²⁵ Prior to the earthquake, Haiti struggled with corrupt politics and an unstable economy, which contributed to the government's disorganized and uncompassionate response. Many Haitian bodies were piled into dump trucks and bulldozed into mass graves,²⁶ making surviving families feel frustrated and resentful towards the recovery teams.²⁷ Reacting to the Haitian government's inefficiency, the United States, the United Nations, other international actors, and non-governmental organizations stepped in to meet the immediate needs of survivors

²⁵ Hou, Laurent, and Peijun Shi. "Haiti 2010 Earthquake - How to Explain Such Huge Loses." *International Journal of Disaster Risk Science* 2.1 (2011). Print.

²⁶ Cave, Damien. "As Haitians Flee, the Dead go Uncounted." *The New York Times*. 2010. <http://www.nytimes.com/2010/01/19/world/americas/19grave.html>

²⁷ Van Hoving, Daniel, et. al. "Haiti Disaster Tourism – A Medical Shame. *Prehospital and Disaster Medicine*. May 2010.

and search for the bodies of foreign nationals. The problem was that the foreign DVI teams tended to privilege their own nationals over Haitian victims in their relief efforts. By tossing Haitian bodies aside in the search for remains, the DVI teams did not respect universal equal human value but instead placed a higher value on their own nationals.²⁸ In contrast, after the tsunami, the Royal Thai government established a center in Phuket to direct international efforts to identify victims, both foreign and Thai, demonstrating regard for equal human value.²⁹

2.4 Relief Efforts and Respecting the Dignity of the Living

Since recognizing and respecting dignity preserves the exercise of individuality free from harm, respecting the fullest sense of dignity requires a certain level of consideration for others so they can shape an individual, worthwhile life of their choosing. In post-disaster contexts, relief efforts are used to uphold this minimum standard of consideration for the living. Efforts that respect the dignity of the living must provide for the needs of the survivors and correct the ambiguity that survivors experience when their loved ones are missing. In the aftermath of disaster, relief involves fair treatment of the living, such as provisions for basic needs like food, making information available to them, as well as using available resources, when feasible, for identification of loved ones. Humanitarian practitioner and researcher Simon Robins describes “victim-centered transitional justice” as a transitional process developed from the self-defined needs of the living victims. The goals of transitional justice do not ignore consideration for the dead, but they are focused on supplying for the living in order to respect their fullest sense of dignity.

Haiti exemplifies a case where dire political and economic conditions limited the scope of provisions to respect the dignity of the living. Because of extreme poverty and political instability, the minimum standard of consideration for the needs of survivors and treatment of

²⁸ Harris, Dan, "Obama Enlists Ex-Presidents; Haitians Grow More Desperate Amid Slow Aid, Stench of Death," *ABCNews.com*, 16 Jan. 2010, <<http://abcnews.go.com/WN/HaitiEarthquake/obama-enlists-presidents-haitians-grow-desperate-amid-slow/story?id=9579651>>.

²⁹ "Thai Government Response," *UN Thailand: Home*, 3 Dec. 2011, <<http://www.un.or.th/tsunamiinthailand/ThaiGovernmentResponse.html>>.

victims was very low after the 2010 earthquake. Haitian officials and international aid efforts focused extensively on the basic needs of the living for survival. The relief agencies focused on basic human needs like emergency shelter and non-food items (International Federation of Red Cross and Red Crescent Societies, IFRC), food (World Food Program, WFP), health care (World Health Organization, WHO, and Pan American Health Organization, PAHO), and water, sanitation, and hygiene (UNICEF). However, the lack of cooperation among aid groups resulted from the disorganization and chaos of the disaster and exacerbated already ineffective treatment of the living and dead.

Their efforts attempted to respect the dignity of the living but failed to do so. The relief did not provide sufficient food, shelter and health care to survivors. For example, Haiti planned to build 124,889 temporary shelters, but only managed to construct 19,197 by November 2010.³⁰ The Haitian government and the international community failed to provide secure housing for displaced survivors. In addition, the continued outbreaks of cholera and the interruption of other disease mitigation tactics demonstrate a failure to uphold the basic needs of survivors. The Haitian government's poor attempts to provide for the survivors prevented adequate resources from being allocated in order to respect the victims' dignity. If societies meet the minimum standards of treatment of the living, the surviving communities will have a better chance to rebuild their lives after the disaster.

When a survivor is uncertain as to the fate of a loved one, his suffering can be exceptionally debilitating. However, relief efforts can help alleviate the misery of the living and ease further anguish. The wrongful treatment of remains affects the dignity of the living by prolonging their suffering, depriving them of the opportunity to acknowledge and mourn their losses, and limiting their abilities to envision the future. If societies meet the minimum standards of treatment of the dead, the surviving communities will have a better chance to rebuild their lives after the disaster.

2.5 Preventing and Correcting Effects of Ambiguous Loss

³⁰ "The Earthquake in Haiti: The IRC Responds," International Rescue Committee, (2011) 15.

Body recovery and identification respects the fullest sense of dignity for the living by answering questions about ambiguous loss, providing truth and evidence of the fate of the victims, and restoring the identity and body of the dead for the living. When an identity is matched with a body, this restores the individuality of the dead while providing psychological relief for the living. This helps survivors cope with the incident and rebuild a worthwhile future. As noted by Simon Robins, various situations, including the former Yugoslavia, Iraq, Rwanda, and Northern Uganda, reveal that effective relief can come about through information and knowledge, like DNA identification.³¹ For instance, when a body is identified, the truth about the fate of the dead ends false hope and lingering uncertainty by answering questions like: am I now a widow or still a wife? What do I do with my loved one's belongings? Is his/her property now mine? What about insurance? Could my loved one show up unexpectedly at my door one day? Did he/she flee the disaster and is now working elsewhere, in order to come get me once he/she has made a living? Is there a chance we will run into each other later in life? These constant questions cause uncertainty and inhibit the living's individuality and personhood from developing. The return of identified remains also provides information and bodies for religious needs, concrete evidence of death, and proper burial.

Specifically in cases of ambiguous loss, confirmation of an individual's death through receiving identified remains is the ideal way to provide clarity regarding the whereabouts of the missing in post-disaster context. For this reason, victims of natural disasters should be identified rather than just buried anonymously in mass graves. This will result in long-term benefits because the living will have concrete knowledge about the status of their loved one, allowing them to begin the coping process and properly reintegrate themselves back into society. In addition to identification efforts, governments should provide psychological services to alleviate the effects of ambiguous loss. Preventing and correcting ambiguous loss relieves prolonged suffering among survivors. Therefore, a minimal effort to prevent and correct ambiguous loss is a type of merciful relief that respects the fullest sense of dignity for the living by giving them the opportunity to shape their individual future and life in a worthwhile way.

³¹ Robins, Simon, "Towards Victim-Centred Transitional Justice: Understanding the Needs of the Families of the Disappeared in Postconflict Nepal," *International Journal of Transitive Justice*, 5 (2011): 75-98.

Pauline Boss concludes that there seems to be a universal human need to bury one's dead. This universal need stems from cultural reasons, the process of detachment or "letting go" of the individual, and the desire to be included in a supportive ritual.³² Receiving the remains of a loved one can be vital to acknowledging that the person is actually dead. It also enables families to perform burials and associated rites. Funerals give the surviving community an opportunity to celebrate the lives of those who have passed away. They also serve to unite survivors, strengthening a sense of community through mourning. Understanding that the receiving of the remains of the deceased is a universal human need demonstrates the importance of identifying victims in post-disaster contexts.

In Haiti, identification is necessary for survivors to fulfill their religious needs and perform proper burials. Poor treatment of the dead increased the suffering of the survivors. As noted in an earlier section, Haitians feared for the spirits of the hundreds of thousands of remains. Although around 80 percent of the population is Catholic, more than half of Haitians practice Voodoo.³³ These beliefs call for a death ritual to release the spirit of a person to God. If the ritual is not performed, the spirit is trapped inside the body. As a result, many Haitians are concerned that the mass graves prevent the spirits of those killed in the earthquake from reaching their final destination. The mishandling of the dead is unsettling to the survivors because they believe their loved ones cannot make their spiritual passage to death. Furthermore, without the identification of the victims, survivors cannot find comfort in being certain that their loved ones have completed their life cycle.

While certain religious customs can contradict identification methods, cultures and religious customs are not static; they can adapt to circumstance. If digging up bodies could help alleviate communal suffering, then religious practitioners will often allow for certain exceptions to tradition. Indonesia's response to the 2004 Indian Ocean tsunami is an example of suspending customs for the sake of human welfare. Indonesia is a predominantly Muslim country, and

³² Boss 561-562.

³³ Muir, David, "Haiti's Government Has Told Its People to Leave Dead Bodies out in the Open," *ABC News*, 23 Jan. 2010 <<http://abcnews.go.com/WN/haitis-government-told-people-leave-dead-bodies-open/story?id=9644753>>.

according to Islam, a body should not be cut or disturbed after death.³⁴ In light of such beliefs, investigators did encounter opposition when they attempted to unearth bodies and acquire DNA. However, many religious leaders acquiesced in their beliefs, and consented to identification of bodies despite the discord between identification methods and religious customs because they felt the process would be of great benefit to members of communities.³⁵

The Thai government's response to the tsunami demonstrated that identification efforts can be carried out while respecting the religion and culture of the surviving community when some bodies were identifiable. The national government provided individual aluminum coffins for each body. The Thai government and international community were able to identify many of the bodies, though some were not identified. Presumably, these cases largely consisted of undocumented migrants, who were afraid of coming forward with DNA evidence, since it might result in their deportation. In spite of this knowledge, the Thai government equipped unidentified bodies with microchips, such that should future technologies or additional information enable identification, it could be done. The government also realized the importance of religion and culture to the bodies. While customs of different communities normally diverge, the Thais performed rites that were compatible with Buddhist, Christian, and Muslim faiths.³⁶ This exemplifies a post-disaster context that respected the dignity of the leaving and helped them rebuild a worthwhile life and shape a future for themselves.

Identification efforts can prevent or alleviate ambiguous loss and respect the dignity of the surviving community, but it is also important to provide psychological services. In order to alleviate some of the psychological implications of ambiguous loss, resources should be allocated to provide counseling in surviving communities. While not all problems can be corrected through psychological services, counseling has the capacity to alleviate some mental suffering and encourage survivors to continue their lives and better exercise their agency. As noted by Pauline Boss, counseling for affected families can be extremely effective, especially

³⁴ Doretti, Mercedes and Jennifer Burrell, "Gray Spaces and Endless Negotiations," In Les W. Field and Richard Gabriel Fox, *Anthropology Put to Work*, (Berg Publishers 2007), 53.

³⁵ Ibid.

³⁶ Berger, Sebastien, "Burial for Hundreds of Unknown Tsunami Dead," *Telegraph*, 07 Dec 2006, <<http://www.telegraph.co.uk/news/worldnews/1536277/Burial-for-hundreds-of-unknown-tsunami-dead.html>>.

when conducted in a respectful and strategic manner. For example, when Spanish speaking therapists were trained to work with the Spanish-speaking victims of 9/11, Boss notes that “families felt more comfortable and understood more quickly that what they were feeling had a name, that it was not their fault, and that the ambiguity caused a normal ambivalence and understandable conflict.”³⁷ Therefore, psychological services can effectively contribute to the survivors’ resilience, which in turn leads to the community’s ability to move forward from the chaos of disaster.

The attention given to the mental health of the survivors of the 2004 tsunami in Thailand demonstrates the importance and effectiveness of psychological support. Immediately after the disaster, the Department of Mental Health (DMH) sent out psychologists, pharmacists, nurses, and social workers to aid victims. These teams offered group counseling, individual counseling, and home visits that continued for two years.³⁸ A majority of the team members came from a group of volunteers called “Village Health Volunteers,” who received basic training in how to provide support after loss. This rapid response and mobilization of support staff and workers provides a model of how local psychological aid could function. The psychological relief efforts made to survivors in Thailand demonstrate how the dignity of the living was respected through support in rebuilding of their lives.

³⁷ Boss 557.

³⁸ United Nations, The World Bank, *Tsunami Thailand: One Year Later*, 2005, <http://siteresources.worldbank.org/INTEASTASIAPACIFIC/Resources/TsunamiTH_One-Year-Later.pdf> 30.

3.0 Consideration for the Dead

While living humans have dignity in its fullest sense, the deceased also retain moral status, although not to the extent of the living. This chapter demonstrates that the dead maintain residual dignity, which merits respect through minimum standards of consideration in post-disaster contexts.

3.1 Residual Dignity and Respect for the Dead

The dead derive dignity through preserved characteristics of their distinct identity as former living persons and through conceptual relationships that the living maintain with the dead.

Characteristics That Distinguish the Level of Dignity for the Dead and of the Living

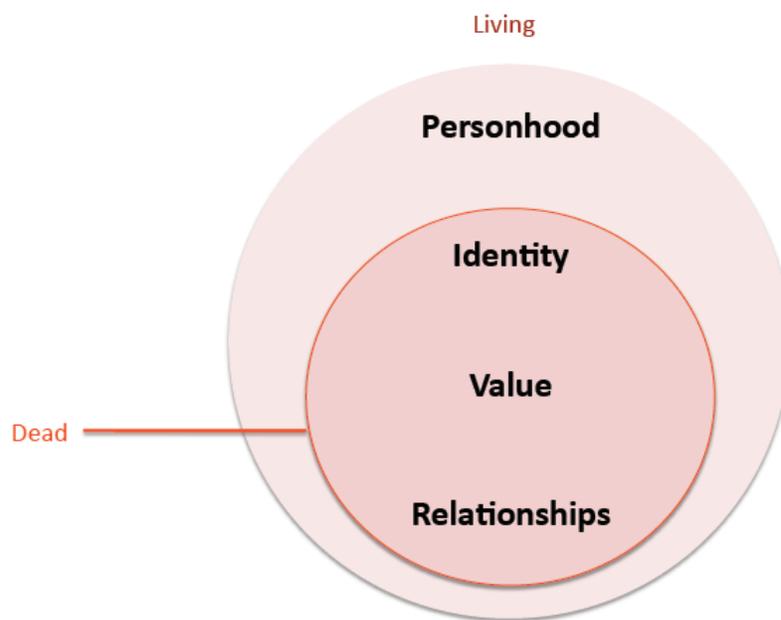


Figure 3: Residual Dignity Compared

Death strips humans of personhood, as the dead are no longer conscious of needs, interests, skills or assets. They cannot make choices for themselves nor can they utilize resources or capabilities to act autonomously. Therefore, the dead can neither appreciate liberties nor be affected by restrictions on liberties. Still, the dead do possess a degree of individuality from their identity

that death does not eliminate. They embodied a distinct identity: biologically as a unique member of the species, personally from life experiences, and socially through relationships and the memories that remain in the minds of the living.

The dead possess the genetic makeup of their species and will thus always have value as biological human beings. We all share a common beginning and end: birth and death. These passages of our lives connect us through a journey of moral and individual development. This gives humans a value that the dead still hold. Relationships maintained by the living, who continue to see the dead as loved ones with enduring presence, recognize the value of the deceased's individuality. For instance, children may still remember a deceased parent as their loving mother or father. As Sarah Wagner notes, "identity not only signifies the relationship between a name and a set of physical remains, but also encompasses the social ties that bind a person to a place, a time, and, most importantly, to other human beings."³⁹ Funerals and similar social customs indicate that the dead retain relational value to the living, and that the living feel a need to honor that person and life they lived. Because the dead continue to possess individuality and the living continue to value them, the dead should be treated with a minimal level of consideration in post-disaster contexts. If not, the living may suffer emotional harm that affects all aspects of their lives.

3.2 Relief Efforts and Respecting Residual Dignity

In post-disaster contexts, relief efforts can provide a minimum standard of consideration for the dead. This involves fair treatment of the dead through cautiously handling dead bodies and doing so in a way that makes future identification of the body possible. Failure to uphold this minimal standard of identification and respect erodes the residual dignity of the dead by devaluing their bodies and disregarding identity. Proper identification restores identity, thereby preserving individuality. Moreover, maintaining a minimal standard of respect demonstrates that a community or state acknowledges human individuality and identity. The means through which a state can achieve this goal will vary by circumstance, but there are basic criteria that must be met in order to fulfill the duty to respect the dead, which are outlined in Chapter 4 on Policy.

³⁹ Wagner 11.

In the aftermath of the Haitian earthquake, the state response teams did not provide means for later identification: use of dump trucks, bulldozers and mass graves disrespected the dignity of the dead by diminishing the feasibility of present or future identification. This mistreatment of the dead failed to respect residual dignity by disregarding the worth of the deceased. Failure to handle the dead with a certain level of care and compassion demeans the value of human individuals.

In contrast, immediately after the 2004 tsunami, The Royal Thai Government sent DVI teams to examine and record key information about each body. Workers took DNA samples from every body, whether in the form of hair, teeth, or bone. During the identification process, refrigerated containers stored unidentified bodies to preserve the remains and increase the chances of a successful identification. In 2006, the Thai police buried the last unidentified bodies together in an organized arrangement; each with a microchip and an identification number should future technology permit their exhumation for possible identification. Thailand demonstrated through these procedures recognition of human equality and worth and a regard for the dead among the living. These types of efforts should occur when possible in order to respect the residual dignity of the dead.

3.3 Why A Duty-Based Justification?

The duty to respect dignity justifies the obligation to treat both the living and dead with respect in post-disaster contexts. This argument avoids resting on the claim that the dead have rights. By the aforementioned definition and purpose of human rights, the dead do not possess them. However, the dead retain a special moral status through their enduring individuality, value as former individuals, and continued relationships with the living. Because of this, there is a duty to respect residual dignity. Hence, there is a duty-based argument that justifies relief efforts in post-disaster contexts, but does not make claims about the rights of the dead.

Furthermore, the duty to respect dignity justifies relief in post-disaster contexts by offering a set of minimal standards of consideration of the dead, as defined in the previous section. The duty-based justification allows for a flexible minimal standard to suit diverse situations and cultures.

For example, while wealthier countries might have the resources to use DNA identification efficiently, less developed countries do not have the option to use more advanced identification techniques. In these cases, considerations like health care or respectful treatment of remains can take place. An adaptable minimum standard of consideration also accounts for cultural diversity. For example, one group of people may find it more respectful to burn bodies and spread their ashes over the ocean, while another group might prefer to bury the dead intact. The duty-based argument carefully takes feasibility into account by not requiring a high and burdensome level of consideration. Yet, the duty-based argument still accounts for relationships and the enduring individuality of the dead. Dignity applies to every human, including the deceased, and every living human has an obligation to respect the fullest sense of dignity as well as derivatives of dignity.

4.0 Policy Suggestions

Respecting connections between living people and the victims of natural disasters requires developing international policies for disaster recovery, respectful treatment of victims' remains, and identification that reflect a state's resources and capabilities. To achieve uniform international standards, a permanent disaster victim organization should be created to coordinate rescue teams and provide financial support and disaster mitigation plans. Identification efforts respect the unique life of the deceased, pre-existing relationships that remain between the living and their dead relatives, and the body's status as a former living human being. There are also cases where a lack of government action exacerbates disaster, and in these cases, redress and adequate planning for the future ensure that the government upholds their duties in the future. Finally, secondary policy suggestions address the detrimental effects on the living of missing community and family members.

4.1 A Permanent Disaster Victim Organization

In the wake of a natural disaster, one of the first threats to the residual dignity of the dead is the disorganization of relief efforts and presence of multiple international teams with conflicting objectives. Creating an international organization would alleviate confusion by coordinating the efforts of member countries, creating standards for treatment of recovered bodies, and facilitating communication with the affected country. For example, after the 2004 tsunami in Thailand there were more than thirty DVI teams sent in to search for victims.⁴⁰ Although the Royal Thai government created a center in Phuket to organize the diverse efforts, not all countries have the resources to accomplish this. In contrast, disasters in developing countries often go unnoticed by the international community. However, the United States and international organizations such as the Red Cross quickly responded to the 2010 Haitian earthquake. Yet, even when international teams entered Haiti searching for bodies, they prioritized their own citizens.⁴¹

⁴⁰ United Nations Country Team, *Tsunami Thailand One Year Later: National Response and Contribution of International Partners*, Bangkok, Dec. 2005, (Joint Publication of the UN Country Team, the World Bank, and the UNDP), 50.

⁴¹ Harris.

Several international organizations already have experience in forensic identification and would be vital partners and advisers for any permanent disaster victim organization. We suggest the initial planning committee be composed of members of the ICMP (International Commission for Missing Persons), WHO (World Health Organization), Interpol (International Police Organization), the ICRC (International Committee of the Red Cross), and PAHO (the Pan-American Health Organization), as a preliminary list. The collective expertise of these institutions would help in defining realistic standards and frameworks for handling the victims of natural disasters. Such collaboration is not new for the ICMP, since it already has standing agreements with Interpol, the European Union, and Denmark to assist after disasters. In recent years, the ICMP has extended beyond its origins in post-conflict Bosnia and has identified 1,378 missing persons from natural disasters such as the Thailand tsunami and Typhoon Frank in the Philippines.⁴² ICMP's knowledge in orchestrating identifications of thousands of bodies while dealing sympathetically with families is invaluable in any disaster context. The Red Cross, Interpol, and PAHO have all developed their own detailed manuals for first responders with recommendations ranging from the burial of unidentified bodies to providing psychosocial services for families and rescue workers. All of these organizations have taken steps toward efficient responses following natural disasters and this effort can be strengthened through cooperation. The following pages detail a procedure for initiating such an organization and creating a structure conducive to respect for the dignity of the victims and the living.

4.2 Proposed Structure

Timing is crucial in a natural disaster; to avoid bureaucratic delays, any permanent organization needs a clearly defined structure and readily available means to initiate aid. General inspiration for the structure comes from Interpol's *Disaster Victim Identification Guide* and the Red Cross's *Management of Dead Bodies: A Field Manual for First Responders*. Similar to the United Nations, our proposed organization would have a rotating board of member countries with two-year terms so as to not place an excessive burden on any one member. The founding states,

⁴² "ICMP Makes Highest Number of DNA-Assisted Identifications in the World," *ICMP - International Commission on Missing Persons*, 14 Sept. 2009, <<http://www.ic-mp.org/press-releases/icmp-makes-highest-number-of-dna-assisted-identifications-in-the-world-icmp-putem-dnk-ostvario-najveci-broj-identifikacija-na-svijetu-icmp-realiza-el-mayor-numero-de-identificaciones-por-adn-en-el-mun/>>.

meanwhile, would have a permanent presence on the board to provide stability and maintain records of past resolutions. Member states may assign their own representatives with knowledge or expertise of emergency relief. The responsibilities of this board would be to maintain standards, collect membership dues in a general donation fund, and meet immediately with officials of disaster-stricken member countries or non-members that have appealed for help. To encourage membership among developing countries, membership dues would depend upon a country's economic status and GDP.

Although any country may apply for membership, countries would be required to formulate a minimal national disaster management plan as well as provide proof of its distribution to citizens in a format they can access. The reason for such a requirement is two-fold. First, having a national plan already in place better prepares citizens and local governments for a disaster, saving time and lives. Making this a requirement gives states an incentive to create their own plans to protect the dignity of their citizens once disaster strikes. The success of disaster victim identification, furthermore, tends to depend on the region's experience, planning, and availability to forensic services.⁴³ The second reason is that citizens have a right to knowledge of disaster recovery plans, regardless of literacy. As mentioned in our discussion of individuality, education is one of the minimum provisions necessary for one to exercise autonomy and develop personhood. To satisfy this need, these plans may be distributed as text in a literate populace or as picture books in illiterate regions.

Our two case studies reinforce the usefulness of instituting natural disaster plans. Although Thailand's response to the tsunami was relatively respectful of dignity, a widely known plan would have saved additional lives. In Thailand, for example, many migrant fishermen, coastal villagers, and visiting tourists were not aware of the tell-tale signs of an approaching tsunami, such as rapidly receding waters.⁴⁴ As such, many villagers and tourists unknowingly exposed themselves to danger by venturing out into the waters. Moreover, there were no emergency alert systems in effect to warn people. Thailand has since accounted for this by constructing 76 siren

⁴³Interview with Kirsty Wright, Senior Lecturer in Forensic Biology, Griffith University.

⁴⁴] "Tsunami Warning System," *Ocean Explorer*, National Oceanic and Atmospheric Association, <<http://oceanexplorer.noaa.gov/edu/learning/player/lesson09/191a2.htm>>.

towers along the coast.⁴⁵ The Thai government also passed the Disaster Mitigation and Recovery Act in 2007 that founded the Department of Disaster Prevention and Mitigation. Though Thailand did not initially have a disaster plan, their current legislation and warning system will help to prevent similar damage in the future.⁴⁶

4.3 Coordinating Disaster Response

There must be an efficient method for states, both member and non-member, to appeal for aid in the aftermath of a natural disaster. The obligation to provide assistance when necessary must supersede political and cultural differences; denial of aid based on a government's politics is tantamount to disregarding the inherent dignity of the disaster victims. Countries will only be denied aid if they are non-members who refuse to abide by the standards for the treatment of the dead, as set forth by the proposed permanent organization. This appeals system will also enact a mechanism by which citizens can self-report a natural disaster when a state is unable or unwilling to do so. State inaction contributed to the chaos following the 2010 Haitian earthquake, when the government failed to declare a state of emergency for six days.⁴⁷ This was, however, partially due to the high loss of life among members of the government and the collapse of several key government buildings. By allowing individual self-reporting, a people's dignity will not have to go untreated.

To begin the appeal process, a representative from an afflicted country could submit a form to the board, which would then be required to meet within twenty-four hours of receiving the appeal. A representative of the affected nation would have to present at this meeting the types of aid the country needs, like shelters, refrigerated storage containers, or disaster victim identification training. Together they would determine the distribution of finances and resources according to the specific needs of the country. In order to provide aid successfully, the board would need to maintain communication with the affected country's representatives or local

⁴⁵ "Indian Ocean Tsunami Warning System," *BBC News*, 23 Dec. 2005, <<http://news.bbc.co.uk/2/hi/science/nature/4524642.stm>>.

⁴⁶ "PM Invokes Natural Disaster Law," *Bangkok Post: The World's Window on Thailand*, 21 Oct. 2011, <<http://www.bangkokpost.com/breakingnews/262530/pm-invokes-natural-disaster-law>>.

⁴⁷ Hou, Laurent, and Peijun Shi, "Haiti 2010 Earthquake - How to Explain Such Huge Loses," *International Journal of Disaster Risk Science* 2.1 (2011), 29.

governments to ensure that supplies and teams reach their intended destinations. Of course, to provide this help, the organization has to have resources, trained professionals, and a set of standards in place. Although many non-profits and government agencies have developed their own standards, our organization would consolidate international standards for victim treatment and identification. All member countries and recipients of the organizations' aid would commit to treating the bodies of the dead according to the proposed set of standards detailed in the next section.

4.4 Determining International Standards and Supplies for Treatment of the Dead

A set of international policy standards for handling bodies of victims of natural disasters would secure a minimum level of respect for the dignity of the dead. Kirsty Wright, the Manager of the International Team at Phuket in 2005, stressed in an interview the necessity of internationally accepted ethical guidelines and standards so as to ensure accuracy and fairness to all of the victims.⁴⁸ Part of this minimum level includes a reasonable attempt at identification, consistent with the resources of the state. This attempt can range from temporarily burying a body for later identification to detailed dental and DNA analysis in more developed countries. Once bodies are identified, the DVI teams would be expected to return the remains of the victims to their families whenever possible. If bodies must be temporarily stored while waiting for forensic teams, individual identification numbers should be added to each body with either waterproof tape or some other non-degradable material.⁴⁹ In post-disaster contexts, however, there have been a series of mistakes and misconceptions that violated dead people's dignity. These errors include hastily digging mass graves, misconceptions about the spread of disease from dead bodies, and a lack of training for local populations. In order to properly address these problems, it is necessary to develop a criteria for the handling and burial of dead, local education about dead bodies, and mobilization of DVI team(s) that can work with and/or train local volunteers.

⁴⁸ Interview with Kirsty Wright.

⁴⁹ Morgan, Oliver, Morris Tidball-Binz, and Dana V. Alphen, eds., *Management of Dead Bodies After Disasters: A Field Manual for First Responders*, (Washington D.C.: Pan American Health Organization, 2006) 14.

Mass graves reflect heedless treatment of remains because they fail to respect bodies as individuals and their relationships to the living. Bodies buried en masse can become intermingled and difficult to separate later for identification purposes. Bodies should be carefully buried in shallow, trench graves according to the following guidelines: 1.5 meters deep, .4 meters between each body, located away from any drinking water sources, carefully marked locations of each body, and bodies in one layer only.⁵⁰ A model example of such burial practice is Thailand's treatment of their remaining 700 unknown victims of the 2004 tsunami. The Royal Thai Police buried the unknown victims in a cemetery in Bang Muang and installed microchips (small electronic devices that stores information) on each one in the even that future developments in technology could make identification possible.⁵¹

Standards for burial do not necessarily address the root cause of careless mass burials. There are often rumors that decaying bodies will spread disease in already-suffering populations, causing local officials to frantically dispose of the bodies. Disseminating education and information is vital to address this concern. Except for possible contamination of water, bodies are not a cause for alarm and are not likely to spread disease. In fact, a living being is more likely to spread disease than a dead body, given that most viruses and bacteria cannot survive more than a few hours.⁵² Appropriate use of gloves and facemasks can alleviate fears among volunteers of contracting diseases like hepatitis and AIDS.

Developing countries like Haiti often lack the professional teams and forensic expertise to sort and identify victims. Our proposed disaster organization would have volunteer forensics experts, anthropologists, and doctors (similar to or in cooperation with *Médecins Sans Frontières*) ready to mobilize to the affected region. Part of the team's responsibility would be to involve the efforts of local citizens through basic on-site training. By incorporating the community into relief efforts, states can depend less on international aid and help form their own infrastructure for future disaster responses. In fact, Interpol already has a mechanism in place so that countries can

⁵⁰ Ibid. 10.

⁵¹ Berger.

⁵² Eberwine, Donna, "Disaster Myths That Just Won't Die," *Perspective in Health-Magazine of the Pan-American Health Organization*, 5 Nov. 2005.

request the assistance of its DVI teams.⁵³ A conclusive examination of bodies includes recording detailed descriptions of the location of each corpse, taking DNA samples, fingerprints, dental descriptions, and moving the bodies to a secure location. During the 2004 Indian Ocean tsunami, Thailand was the only country to provide more than 100 refrigerated containers to the temporary morgues to slow the decay of human remains.⁵⁴ Developing countries often do not have such resources, so the centralized disaster organization must allocate donations toward the purchase of mobile refrigerated units that can be flown or brought by ship shortly after a natural disaster. Containers used by commercial shipping companies should be sufficiently strong and kept at 2-4 degrees Celsius.⁵⁵

4.5 Explanations of Different Forensic Techniques

As discussed in the previous section, a reasonable attempt at identification includes using whatever resources are at hand. Before we address the uneven spread of DNA identification resources worldwide, the following is a summary of the different identification techniques. Techniques range from basic methods to cutting-edge DNA analysis.

Forensic Identification

Large-scale conflicts and disasters often strip victims of their identities. The degree to which bodies are damaged, handled, and exposed to the elements, as well as the rate of the bodies' decomposition challenge the identification process. Considering all these factors, visual recognition alone is generally an unreliable manner of identifying a body.⁵⁶ Visual recognition may provide in some instances an indication of identity, but it should not be the final assessment. Instead of relying on an undependable method, forensic identification through scientific tests and technology offer more definitive revelations. There are primary and secondary methods of identification, depending on the accuracy of identification the method provides. Secondary methods include circumstantial identifiers like physical descriptions of the victims by survivors,

⁵³ Interpol, *Disaster Victim Identification Guide*, Standing Committee on Disaster Identification, 2009.

⁵⁴ Morgan, Oliver W., Pongruk Sribanditmongkol, Clifford Perera, Yeddi Sulasmi, Dana Van Alphen, and Egbert Sondorp. "Mass Fatality Management following the South Asian Tsunami Disaster: Case Studies in Thailand, Indonesia, and Sri Lanka," *PLoS Medicine* 3.6 (2006). <www.plosmedicine.org> 0811.

⁵⁵ Morgan, *Field Manual for First Responders*, 9.

⁵⁶ Interpol 15.

medical findings, and clothing found on the body. Primary methods include fingerprint, dental, and DNA analyses.⁵⁷ While each of these primary methods can be effective in isolation, simultaneously employing different ones makes identification efforts more efficient.

Secondary Methods of Identification

Secondary identification is often the primary first-line method of identifying the remains when resources are scarce. Ideally, these should not be the sole effort utilized because they cannot provide objective identification in the same manner as DNA, fingerprints or dental records. Nonetheless, they are still useful in the identification process.⁵⁸ These types of methods include descriptions of the victims, and evidence found on the bodies of the victims. Personal descriptions include basic data like approximate age, height, gender and ethnic or racial affiliation. Scars or the absence of organs or appendages can also differentiate bodies and can provide crucial information about the medical history of the unidentified victim.⁵⁹ Tattoos, moles, piercings and other disfigurements are other possible indicators of identity. Additionally, any items found on the body, like credit cards, jewelry, or articles of clothing, can help identify a body, especially if family members can identify, for example, a necklace or sweatshirt belonging to the victim.⁶⁰ However, such evidence can be misleading, since personal items may have been inadvertently placed on a body or transferred from person to person before death. It is thus important to rely on primary methods of identification to ensure the proper identity is restored to the victim.

Fingerprint Analysis

Fingerprint comparison can also identify bodies, since it is highly unlikely that any two people possess the same fingerprint. Even though ridges on human fingers follow several general patterns (see figure 2), two fingerprints of the same general pattern still have different beginnings and ends to their ridges. These comparative nuances make fingerprinting a reliable

⁵⁷ Ibid.

⁵⁸ Ibid.

⁵⁹ Ibid. 17.

⁶⁰ Ibid. 18.

method of identification. Additionally, fingerprints do not change with age. The papillary ridges remain constant, even after death.⁶¹

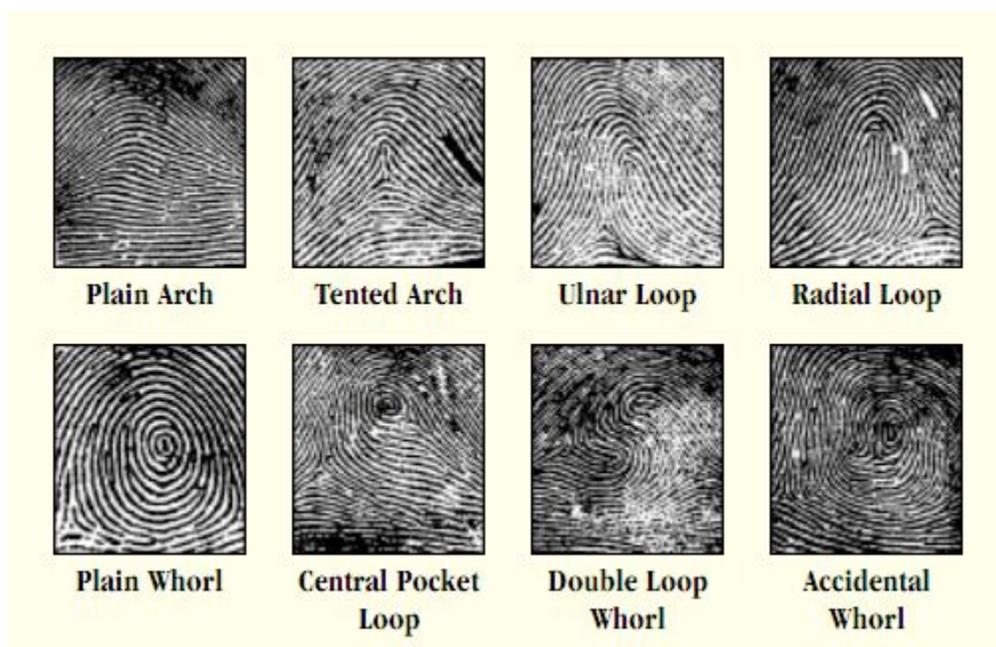


Figure 4: Different Types of Fingerprint Patterns
http://www.fbi.gov/about-us/cjis/fingerprints_biometrics/fingerprint-overview

Classifying fingerprints is relatively simple. Prints can be recorded on an identification card or digitized in a computer system.⁶² Once recorded, prints can be recalled from the database for comparison and identification. The United States, for instance, uses the Integrated Automated Fingerprint Identification System (IAFIS) to search for and match unidentified fingerprints.⁶³ The system represents through fingerprints the identity of 70 million individuals, yet its ability to identify the missing depends on its size: more than three quarters of the United States population is unrepresented by the system.⁶⁴

⁶¹ Interpol 16.

⁶² "Fingerprint Identification," *Federal Bureau of Investigation*, <http://www.fbi.gov/about-us/cjis/fingerprints_biometrics/fingerprint-overview>.

⁶³ "Integrated Automated Fingerprint Identification System," *FBI*, <http://www.fbi.gov/about-us/cjis/fingerprints_biometrics/iafis/iafis>.

⁶⁴ "USA QuickFacts," *State and County QuickFacts*, US Census Bureau, <<http://quickfacts.census.gov/qfd/states/00000.html>>.

Dental Analysis

When an unidentified person is a skeleton, burned, or decomposed, fingerprint identification is invalidated. In these situations, dental analysis assumes a primary role in identification.⁶⁵ Unlike tissue, dental features remain intact long after death. Humans have distinctive teeth and jawbone structures, which can be used to distinguish one person from the next.⁶⁶ Dental treatments, like fillings, root canals, and dentures augment the distinction for each person, as treatments vary for each individual. Furthermore, human teeth can aid in identifying the age of a person as teeth undergo stages of development. They also may contain hereditary and acquired features that can determine racial background and dietary habits, and, if dental work is evident, the county or origin of the victim's dental work.⁶⁷

Dental identification compares ante mortem dental records with an imprint or X-ray of the teeth and jaw of the unidentified person. In this process, there can be one of four outcomes: positive identification, possible identification, insufficient identification evidence, and exclusion.⁶⁸ There are, of course, some challenges to dental analysis. For example, a person's dental records do not necessarily reflect their dental situation at the time of death. For instance a person might lose a few teeth or have significant work done from the time from the time of their records to the time of their death. Yet disparities are often interpretable, and do not necessarily prevent identification. For instance, Figure 3 displays a set of ante mortem (left) and postmortem (right) X-rays of a victim. Though the X-rays are not identical, they show enough similarities to match the unidentified person to his ante mortem dental records. Like fingerprint identification, dental analysis depends upon the availability of ante mortem records, which are scarce in developing countries. For example, after the tsunami in Thailand, dental records helped identify 67% of foreign victims, while the same means identified just 2% of Thai victims were identified by the same means.⁶⁹

⁶⁵ Avon, Sylvie Louise, "Forensic Odontology: The Roles and Responsibilities of the Dentist," *Journal of the Canadian Dental Association*, 70.7 (2004): 453.

⁶⁶ Interpol 16.

⁶⁷ Ibid. 17.

⁶⁸ Avon 453-454.

⁶⁹ Baraybar, Jose Pablo, "When DNA Is Not Available, Can We Still Identify People? Recommendations for Best Practice," *Journal of Forensic Sciences* 53.3 (2008): 540.

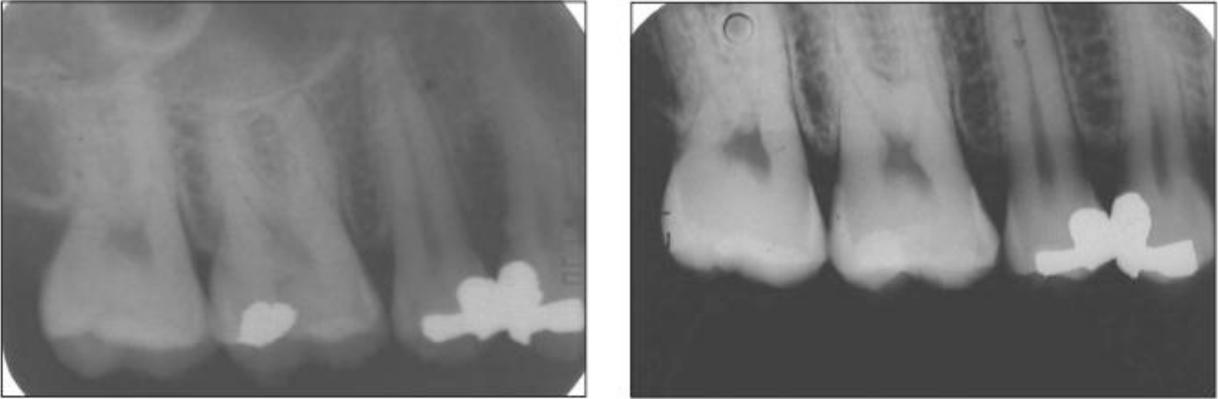


Figure 5: Comparison of Antemortem and Postmortem Dental X-Rays
<http://www.cda-adc.ca/JCDA/vol-70/issue-7/453.pdf>

STR Analysis: Identification through DNA

DNA identification is an essential component of the identification process because genetic information is unique to each individual. DNA testing allows trained investigators to not only identify victims, but also to associate a victim's fragmented or scattered remains.⁷⁰ In large-scale disasters with many victims to identify, kinship-based identification compares the DNA of surviving family members to the DNA acquired from the victims. Identification depends on the shared alleles between family members.⁷¹ This tends to be the most common means of obtaining DNA identification, though it is also possible to match DNA through samples recovered from the belongings of the victim (e.g., cells from their toothbrush or hair roots from their hairbrush).

⁷⁰ National Institute of Justice, *Mass Fatality Incidents: A Guide to Human Forensic Identification*, Rep. US Department of Justice, 25.

⁷¹ "DNA," *International Commission on Missing Persons*, <<http://www.ic-mp.org/activities/technical-assistance/dna/>>.

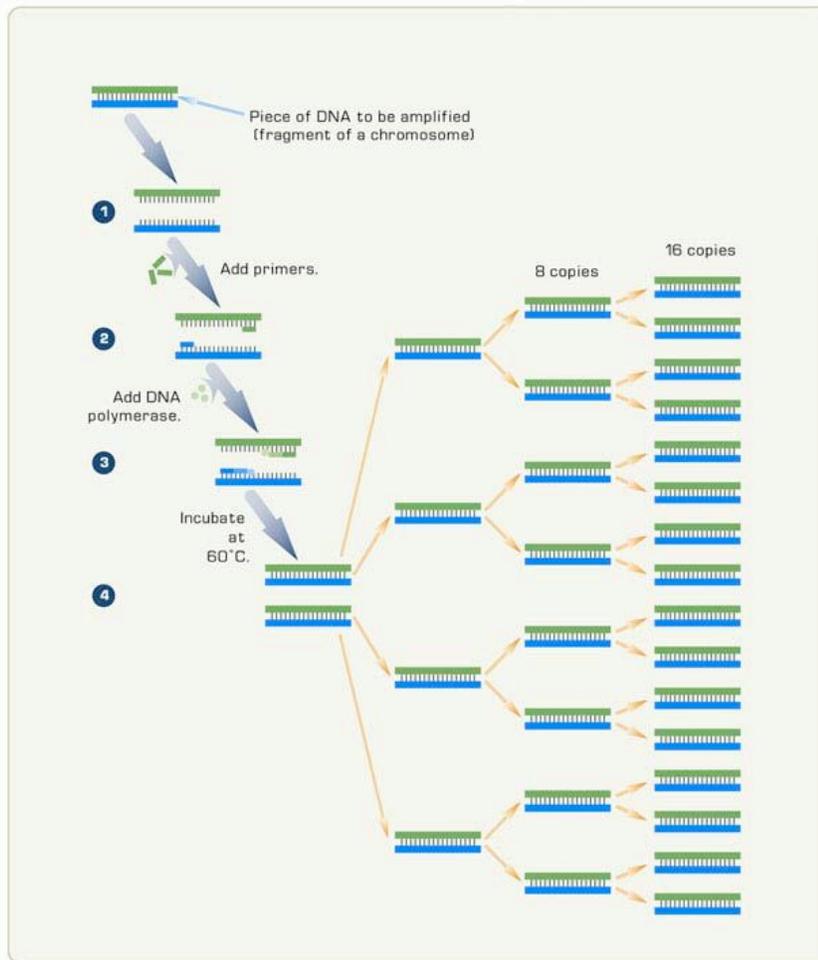


Figure 6: The Steps of the Polymerase Chain Reaction (PCR)
<http://www.learner.org/courses/biology/archive/images/1867.html>

Regions of DNA differ among human beings; these distinct regions form about 0.5% percent of the human genome.⁷² These variations are called polymorphisms, and strands of DNA with the greatest amount of these variations are most useful for DNA profiling.⁷³ One group of polymorphisms is known as short tandem repeats, or STR. These sections of DNA are about two to five base pairs long and occur in specific regions of the DNA called loci. The repetition of each STR is known as an allele. Numbers of loci necessary for sufficient DNA identification

⁷² Aronson, Jay, *Law, Ethics, and Life Sciences* Course, Fall 2010.

⁷³ "What Is a Short Tandem Repeat Polymorphism (STR)?" *The Biology Project*, University of Arizona, 27 Oct. 2000, <http://www.biology.arizona.edu/human_bio/activities/blackett2/str_description.html>.

differs between population groups. For instance, The Federal Bureau of Investigation has determined thirteen loci helpful for identification in the United States, while other institutions use between 9-16 loci.⁷⁴

To compare these short tandem repeats, scientists use PCR, or polymerase chain reaction, to amplify the DNA. PCR can generate billions of identical copies of a DNA sequence that can then be compared against other samples. The process requires just a small sample of blood, skin, saliva or a hair follicle.⁷⁵ Using the PCR technique, the sections of the DNA containing loci are placed into a test tube along with loose nucleotides, a pair of synthesized short DNA segments called “primers”, and the enzyme *Thermus aquaticus* (Taq).⁷⁶ In a heated test tube the double helix of the DNA sample separates into two strands to which the primers bind while Taq links the loose nucleotides to the primer and to each of separated strands in the appropriate sequence.⁷⁷ After 5 minutes, the reaction is complete and results in two double helices copied from the original. When the process is repeated thirty to forty times, the single copy of DNA can be multiplied to hundreds of millions. From this point, the results are placed into a genetic analysis machine that generates a DNA profile and searches for direct matching (in cases of separate body parts) and half allele shares (in parent-child and sibling relationships) for the purpose of kinship-based identifications.⁷⁸ The International Commission on Missing Persons (ICMP), one of the leading organizations in DNA identification of missing persons, only issues matches if there is a 99.95% or greater accuracy of the matches.⁷⁹ Availability and use of DNA analysis differ depending on the context of each situation.

4.6 The Extent of Identification: Uneven Access to DNA Technology

Comparing the dignity of the dead to the dignity of the living, we conclude that respect for the dignity of the living and the residual dignity of the dead commands a reasonable level of

⁷⁴ "Forensics, DNA Fingerprinting, and CODIS," *Nature Publishing Group*,

<<http://www.nature.com/scitable/topicpage/forensics-dna-fingerprinting-and-codis-736>>.

⁷⁵ "PCR Virtual Lab," *Learn.Genetics*TM, <<http://learn.genetics.utah.edu/content/labs/pcr/>>.

⁷⁶ "The History of PCR," *Smithsonian Institution Archives*,
<http://siarchives.si.edu/research/videohistory_catalog9577.html>.

⁷⁷ *Ibid.*

⁷⁸ "DNA."

⁷⁹ *Ibid.*

identification dependent upon a state's resources. On a local level, identification efforts utilize any immediately available technology as well as communication with family and friends of the victims. Due to the variable access to DNA laboratories worldwide, international organizations may assist local efforts.

DNA laboratories and identification facilities are not evenly distributed around the globe. Further, the labs in existence employ their own unique identification procedures and practices and have backlogs of existing work. When natural disasters strike, there is no guarantee that some labs will be able to help. Disparity in resource allocation will challenge a permanent disaster victim organization to find the time and money to construct new labs. Using the United States as an example, the report of the 2006 President's Initiative on DNA stated that "it would be rare for a state or local forensic laboratory to have sufficient funding to cover the expenses with DNA testing in a mass fatality incident response."⁸⁰ Applying this globally, a poorer country faced with meeting the demands of the living and recovery of the dead will not likely be able to fund DNA identification for its victims. We will present policies that the suggested international organization could undertake to make this technology more readily available. Though the cost can be prohibitive, the organization could slowly raise funding from member states and private entities.

A suggested response to this dilemma is a mobile DNA technology lab. This idea comes from the "Hope Ship" that served as a floating hospital from 1960 to 1974. The ship was the brainchild of Dr. William B. Walsh, who served in the United States Navy as a medical officer during WWII. Its purpose was a "peace-time hospital ship" for developing nations, and it completed eleven voyages before its retirement.⁸¹ Just as this ship was capable of transporting advanced equipment to multiple locations, a mobile DNA lab could prove useful when natural disasters strike.

⁸⁰ "Assuming Funding, Can the Laboratory Do the Work?" *President's DNA Initiative: DNA Identification in Mass Fatality Incidents*, U.S. Department of Justice, Sept. 2006, <<http://massfatality.dna.gov/Chapter4/LabWork/>>.

⁸¹ "History of Project Hope," *Project HOPE - Homepage*, <<http://www.projecthope.org/about/history.html>>.

In fact, there are already mobile DNA labs in place on a smaller scale. *The Guardian* reported in 2005 that police forces in the United Kingdom tested out a forensic response vehicle that could take DNA samples and compare them to the national database.⁸² Additionally, at Texas A&M University in 2001, researchers received a mobile genetic lab built by Dodgen Industries of Humbolt, Iowa, priced at 120,000, for the purpose of tracking the DNA of endangered animals like bighorn sheep.⁸³ If a “complete genetic lab on wheels” exists for endangered animals, the idea of a mobile lab to identify human beings is not unattainable. Although Project Hope used a ship, modern natural disasters need immediate responses and cannot wait for a ship to dock at port. Therefore, it would be more practical to outfit a plane with minimal forensic materials, PCR analysis equipment, and computer programs to form a DNA database. In the event of a natural disaster, the plane would relocate from its home-site to the airport nearest to the affected region. Its crew would be comprised of disaster victim identification teams, local professionals, and volunteers. Since privacy is a concern, the plane’s home site should be located in a secure member country and protected by appropriate on-site security measures. If the affected region’s security is unstable, the plane should not fly to that airport to avoid the theft or compromise of valuable genetic records. Results from this lab finally need to be commensurate with those obtained by the ICMP, so that families can trust the identifications and begin their grieving process. The ICMP uses the ISO (International Organization for Standardization) 17025 standards, the highest accreditation standards for forensic laboratories and only issues identifications with 99.95% certainty.⁸⁴

4.7 Policy Suggestions for Psychological Counseling

Survivors separated suddenly from their relatives and loved ones experience devastating symptoms of ambiguous loss. Depression and despair hinder a survivor’s ability to function in their daily lives. Our policy recommendations outline methods of providing minimal and affordable grief counseling to both the survivors of natural disasters and the relief workers that

⁸² Seenan, Gerard, "Mobile DNA Lab Piloted," *The Guardian*, 13 May 2005, <<http://www.guardian.co.uk/uk/2005/may/14/ukcrime.gerardseenan>>

⁸³ "Have DNA Lab, Will Travel: Mobile Unit First Of Its Kind," *Science Daily: Science News*, <<http://www.sciencedaily.com/releases/2001/03/010305071728.htm>>.

⁸⁴ "ICMP Forensic Accreditation and Quality Management," *ICMP - International Commission on Missing Persons*, 2008, <<http://www.ic-mp.org/icmp-forensic-accreditation-and-quality-management/>>.

must handle the remains of the victims on a daily basis. Developed countries often have a professional base of psychologists and grief counselors. In the United States after 9/11, the Minnesota-New York Ambiguous Loss project recruited trained psychologists, social workers, and psychiatrists to work with the family members and study the effects of loss.⁸⁵ When there is no existing professional base in a developing nation, international professionals could be brought in to teach local volunteers to provide grief counseling at minimal cost. The actions of Thailand's Department of Mental Health prove that systems of volunteers can be effective. The Department gave brief psychological training to over 700,000 "Village Health Volunteers," who then dispersed throughout the affected regions to offer grief counseling and support.⁸⁶ For relief workers with little time to spare, local religious leaders could also host discussion groups at mealtimes so that the workers can have emotional support to cope with the handling of dead bodies.

There is a gap in existing scholarship about the effects of natural disasters on the families of victims. Although they referred to post-conflict scenarios, Stover and Shigekane in *The Missing in the Aftermath of War* made a similar observation: "No large-scale, cross-cultural study has ever been conducted to understand the long-term psychological impact of disappearances on the relatives of the missing".⁸⁷ A study of the impact of natural disasters on survivors' psychological health and long-term effects would complement Pauline Boss's work on ambiguous loss, *Ambiguous Loss Research, Theory and Practice: Reflections After 9/11*. Further, volunteers and experts alike can better tailor treatments to fit the needs of those suddenly removed from their families and friends. The Thailand Post-Tsunami Mental Health Group performed one such study, albeit on a smaller scale, of post-traumatic stress disorder in children following tsunamis. They studied 371 children ranging from the ages of 7-14 and separated them into groups of unaffected children, children living in displaced camps, and affected children remaining in their

⁸⁵ Boss 552.

⁸⁶ United Nations Country Team 30.

⁸⁷ Stover, Eric, and Rachel Shigekane, "The Missing in the Aftermath of War: When Do the Needs of Victims' Families and International War Crimes Tribunals Clash?" *Revue Internationale De La Croix-Rouge* 84.848 (2002): 859.

homes.⁸⁸ The recommendations from this report included follow-up with children in the years following the disaster and the instruction of teachers and parents in techniques to help the children outside of therapy.

4.8 Natural Disasters and the Law

Caring for victims of natural disasters raises legal issues about the care and management of bodies. Humanitarian law, a manual from the Pan-American Health Organization, and regional responses to natural disasters reflect common guidelines for handling victims in disaster situations. As natural disasters are often considered “acts of God,” legal doctrine can only be considered to a limited extent. Laws resulting from post-conflict scenarios originate in a different legal environment, and we reference them only to seek normative guidance for the treatment of dead bodies after disaster. Other relevant legal issues surround the extent of state responsibility for citizens and a suspension of punitive deportations to ensure adequate care for all.

Humanitarian laws, specifically the Geneva Conventions’ First and Second Protocol, arose from post-conflict scenarios and cannot be directly applied to natural disasters. Article 26 of the Fourth Geneva Convention and Article 33 of the First Protocol concern the norms for the care and search for the bodies of the missing.⁸⁹ Specifically, the drafters insisted upon respect for remains and gravesites regardless of nationality.⁹⁰ They also urge that any burial of the dead be “carried out individually as far as circumstances permit, is preceded by a careful examination, if possible by a medical examination, of the bodies, with a view to confirming death, establishing identity and enabling a report to be made.”⁹¹ Such norms are transferable to natural disasters, where victims can represent multiple nationalities and age groups.

⁸⁸ Thailand Post-Tsunami Mental Health Group, "Symptoms of Posttraumatic Stress Disorder and Depression Among Children in Tsunami-Affected Areas in Southern Thailand," *JAMA: The Journal of the American Medical Association* 296.5 (2006): 558.

⁸⁹ Fourth Geneva Convention Article 24, ICRC initiative on “The Missing” Treaty Law and Protocol I Additional to the Fourth Geneva Convention Article 33, ICRC initiative on “The Missing” Treaty Law.

⁹⁰ Protocol I Additional to the Fourth Geneva Convention, ICRC initiative on “The Missing” Treaty Law.

⁹¹ Rule 117 Accounting for the Missing Persons, ICRC initiative on “The Missing” Customary Law.

The Pan-American Health Organization, in the legal section of its *Management of Dead Bodies in Disaster Situations* manual, discusses the varying reactions of countries, ranging from declaring areas sacred ground to issuing controversial death certificates. Death certificates are sometimes legally necessary for families to continue with certain aspects of their lives or receive financial benefits. The United States normally requires a three-year waiting period for a missing person to be declared legally dead. However, in the wake of September 11th, New York temporarily amended the law to permit urgent certificates to families of the victims.⁹² When natural disasters occur, legal responses should remain flexible.

According to PAHO, the government has the initial duty to care for its people in a disaster situation.⁹³ Even though there is no legal precedent for enforcement, this statement directly addresses the role of the state in searching for the missing and the dead. Efforts may be contingent upon the resources available, consistent with our minimal standard for treatment of the dead and missing. If a disaster scenario overwhelms a state's resources, it is then its duty to appeal for national or international assistance. This duty stems in part from the obligation to respect the residual dignity of the dead, in addition to the dignity of the survivors. When state negligence plays a role in disasters, however, the preceding description is more complicated. There are varying degrees of neglect, ranging from outright ignorance to ineffective building codes. In Haiti, for example, the government designed building codes to account for hurricanes and floods, but not earthquakes. Thus, the concrete buildings meant to protect against hurricanes easily collapsed during the earthquake.⁹⁴ One possible solution to address state negligence is for the proposed permanent disaster victim organization to distribute aid under certain conditions. One such condition would require the country receiving aid to follow the permanent disaster organization's standards for handling of the dead and to formulate a mass disaster plan for the future.

⁹² González, Jorge, Alicia Bastanta, Beatriz Lizárraga, Karl Western, Mary Luz Morales, Marlén Quintero, Jorge Rodríguez, Susana Castiglione, Judith Romero, Zacarías Duarte, "Management of Dead Bodies in Disaster Situations," Washington D.C.: Pan American Health Organization, 2004.

⁹³ Ibid. 36.

⁹⁴ Hou 26.

The last recommendation, from a legal perspective is for countries to suspend political deportations in the midst of a natural disaster. The response of Thailand's migrants to relief efforts illustrates this need. Many of the dead and missing from the tsunami were migrant workers from Burma. Because their families feared deportation, they did not apply for any help or compensation; they did not come forward to the morgue to identify the remains of their relatives either. Many documented legal workers who lost their papers in the flood faced uncertainty about their legal status in the country. By temporarily suspending punitive acts over citizenship claims, response efforts can aid more of the affected populations. Regardless of citizenship status, migrant workers are still human beings with dignity and merit the right to respect and considerate treatment of their dead.

Conclusion

All people have a special moral worth, or dignity, that comes from each individual's equal value as a human being. Because of their moral worth, there is a duty to respect the dignity of all living individuals. This duty commands a minimum standard of consideration for survivors of natural disasters.

The dead possess a sense of dignity that ought to be recognized and respected. Unlike the living, the dead have only one element of individuality: identity. Having an identity gives the dead an enduring individuality. And through the special worth of the dead that arises from their value as humans and individuals and from relationships the living still have with the dead, the dead have a "residual dignity." There is a duty to recognize and respect the residual dignity and preserve the individuality of the dead through a minimum standard of consideration for victims of natural disasters

In post-disaster contexts, this minimum standard takes form in relief efforts that promote the interests of the living and preserve the individuality of the dead. These minimal efforts respect the fullest sense of dignity by providing information, support and ways to cope with the situation. DNA identification, when feasible, is an effective tool for respecting dignity by restoring identity or recognition of that identity, upholding the individuality of the dead and facilitating a better future for the living. Therefore, the minimum level of effort that we outlined in this report fulfills the duty to respect the residual dignity of the victims, along with respecting the full dignity of the survivors.

Using the duty to respect dignity as justification for treating the living and dead with respect has advantages. First, this justification is not based on abstract claims about rights for the dead. Second, the duty to respect dignity allows for a flexible standard of consideration to accommodate various situations and cultures by using feasibility to ensure that the level of consideration is not too burdensome. Third, this justification accounts for the transcendent individuality of the dead and the relationships to the dead maintained by the living.

Bibliography

- Aronson, Jay. *Law, Ethics, and Life Sciences* Course. Fall 2010.
- "Assuming Funding. Can the Laboratory Do the Work?" *President's DNA Initiative: DNA Identification in Mass Fatality Incidents*. U.S. Department of Justice, Sept. 2006. 6 Nov. 2011. <<http://massfatality.dna.gov/Chapter4/LabWork/>>.
- Avon, Sylvie Louise. "Forensic Odontology: The Roles and Responsibilities of the Dentist." *Journal of the Canadian Dental Association* 70.7 (2004).
- Berger, Sebastien. "Burial for Hundreds of Unknown Tsunami Dead." *Telegraph.co.uk*. Telegraph Media Group, 7 Dec. 2006. 02 Nov. 2011. <<http://www.telegraph.co.uk/news/worldnews/1536277/Burial-for-hundreds-of-unknown-tsunami-dead.html>>.
- Baraybar, Jose Pablo. "When DNA Is Not Available, Can We Still Identify People? Recommendations for Best Practice." *Journal of Forensic Sciences* 53.3 (2008): 540.
- Boss, Pauline. "Ambiguous Loss Research, Theory, and Practice: Reflections After 9/11." *Journal of Marriage and Family* 66.3 (2004): 551-66.
- Cave, Damien. "As Haitians Flee, the Dead go Uncounted." *The New York Times*. 2010. <http://www.nytimes.com/2010/01/19/world/americas/19grave.html>
- Cobb, Sidney. "Social Support as a Moderator of Life Stress." *Psychosomatic Medicine: Journal of Behavioral Medicine*. 38.5 (1976): 300-314.
- "DNA." *International Commission on Missing Persons*. <<http://www.ic-mp.org/activities/technical-assistance/dna/>>.
- Doretti, Mercedes and Jennifer Burrell. "Gray Spaces and Endless Negotiations." In Les W. Field, Richard Gabriel Fox. *Anthropology put to work*. Berg Publishers. (2007).
- "The Earthquake in Haiti: The IRC Responds." *International Rescue Committee* (2011). Print.
- Eberwine, Donna. "Disaster Myths That Just Won't Die," *Perspective in Health-Magazine of the Pan-American Health Organization*, 5 Nov. 2005.
- Emmons, Robert. "Striving for the Sacred: Personal Goals, Life Meaning, and Religion." *Journal of Social Issues*. 61.4 (2005): 731-745.
- "Fingerprint Identification." *Federal Bureau of Investigation*. Web. <http://www.fbi.gov/about-us/cjis/fingerprints_biometrics/fingerprint-overview>.

- "Forensics, DNA Fingerprinting, and CODIS." *Nature Publishing Group*.
<<http://www.nature.com/scitable/topicpage/forensics-dna-fingerprinting-and-codis-736>>.
- Fourth Geneva Convention Article 24. ICRC initiative on "The Missing" Treaty Law and Protocol I Additional to the Fourth Geneva Convention Article 33. ICRC initiative on "The Missing" Treaty Law.
- Gaylin, Willard. "In Defence of the Dignity of Being Human." *The Hastings Center Report* 14.4 (1984). Print.
- "Genetic Variation Program." *National Human Genome Research Institute (NHGRI) – Homepage*. <<http://www.genome.gov/10001551>>.
- Goody, Jack. "Death and the Interpretation of Culture: A Bibliographic Overview." *American Quarterly*. 26.5 (1974): 448-455.
- Griffin, James. *On Human Rights*. Oxford: Oxford UP, 2008. Print.
- Harris, Dan. "Obama Enlists Ex-Presidents; Haitians Grow More Desperate Amid Slow Aid, Stench of Death - ABC News." *ABCNews.com*. ABC News Internet Ventures, 16 Jan. 2010. Web. 10 Nov. 2011. <<http://abcnews.go.com/WN/HaitiEarthquake/obama-enlists-presidents-haitians-grow-desperate-amid-slow/story?id=9579651>>.
- "Have DNA Lab, Will Travel: Mobile Unit First Of Its Kind." *Science Daily: Science News*. Science Daily. 6 Nov. 2011.
<<http://www.sciencedaily.com/releases/2001/03/010305071728.htm>>.
- "History of Project Hope." *Project HOPE - Homepage*. Project HOPE. 5 Nov. 2011.
<<http://www.projecthope.org/about/history.html>>.
- Hou, Laurent, and Peijun Shi. "Haiti 2010 Earthquake - How to Explain Such Huge Loses." *International Journal of Disaster Risk Science* 2.1 (2011).
- "ICMP Forensic Accreditation and Quality Management." *ICMP - International Commission on Missing Persons*. ICMP. 11 Nov. 2011. <<http://www.ic-mp.org/icmp-forensic-accreditation-and-quality-management>>.
- "ICMP Makes Highest Number of DNA-Assisted Identifications in the World." *ICMP - International Commission on Missing Persons*. 14 Sept. 2009. 5 Nov. 2011.
<<http://www.ic-mp.org/press-releases/icmp-makes-highest-number-of-dna-assisted-identifications-in-the-world-icmp-putem-dnk-ostvario-najveci-broj-identifikacija-na-svijetu-icmp-realiza-el-mayor-numero-de-identificaciones-por-adn-en-el-mun/>>.
- ICTY Media Office. "Tribunal Welcomes the Arrest of Ratko Mladić." *ICTY Press Releases*. United Nations International Criminal Tribunal for the Former Yugoslavia, 26 May 2011.
<<http://www.icty.org/sid/10671>>.

- "Indian Ocean Tsunami Warning System." *BBC News - Home*. BBC, 23 Dec. 2005. 6 Nov. 2011. <<http://news.bbc.co.uk/2/hi/science/nature/4524642.stm>>.
- Interpol. *Disaster Victim Identification Guide*. Standing Committee on Disaster Identification. 2009.
- "Integrated Automated Fingerprint Identification System." *FBI*. <http://www.fbi.gov/about-us/cjis/fingerprints_biometrics/iafis/iafis>.
- Interview with Kirsty Wright. Senior Lecturer in Forensic Biology. Griffith University. 2011.
- Jordan, Matthew C. "Bioethics and Human Dignity." *The Journal of Medicine and Philosophy*. Oxford Journals. <<http://jmp.oxfordjournals.org/content/35/2/180.full#xref-fn-12-1>> 183.
- Morgan, Oliver, Morris Tidball-Binz, and Dana V. Alphen, eds. *Management of Dead Bodies After Disasters: A Field Manual for First Responders*. Washington D.C.: Pan American Health Organization, 2006.
- Morgan, Oliver W., Pongruk Sribanditmongkol, Clifford Perera, Yeddi Sulasmi, Dana Van Alphen, and Egbert Sondorp. "Mass Fatality Management following the South Asian Tsunami Disaster: Case Studies in Thailand, Indonesia, and Sri Lanka," *PLoS Medicine* 3.6 (2006). <www.plosmedicine.org>.
- Muir, David. "Haiti's Government Has Told Its People to Leave Dead Bodies out in the Open - ABC News." *ABC News*. 23 Jan. 2010. Web. <<http://abcnews.go.com/WN/haitis-government-told-people-leave-dead-bodies-open/story?id=9644753>>.
- Muzaffar, Chandra. *Rights, Religion and Reform: Enhancing Human Dignity Through Spiritual and Moral Transformation*. New York, NY: Antony Rowe Ltd., Chippenham and Eastbourne, 2002.
- National Institute of Justice. *Mass Fatality Incidents: A Guide to Human Forensic Identification*. Rep. US Department of Justice, 2005.
- Nickel, James W. *Making Sense of Human Rights*. Malden, MA: Blackwell Pub., 2007. Print.
- Pan American Health Organization. United Nations Country Team. *Management of Dead Bodies in Disaster Situations*. Washington D.C. 2004.
- Park, Madison. "Where Bodies Go After Natural Disasters." *CNN Health*. CNN-Cable News Network, 14 Jan. 2010. 6 Nov. 2011. <http://articles.cnn.com/2010-01-14/health/haiti.mass.fatalities.bodies_1_mass-graves-body-collection-natural-disaster?_s=PM:HEALTH>.

- "PCR Virtual Lab." *Learn.Genetics*TM. <<http://learn.genetics.utah.edu/content/labs/pcr/>>.
- "PM Invokes Natural Disaster Law." *Bangkok Post: The World's Window on Thailand*. Bangkok Post, 21 Oct. 2011. 6 Nov. 2011. <<http://www.bangkokpost.com/breakingnews/262530/pm-invokes-natural-disaster-law>>.
- "PM Invokes Natural Disaster Law." *Bangkok Post: The World's Window on Thailand*. 21 Oct. 2011. <<http://www.bangkokpost.com/breakingnews/262530/pm-invokes-natural-disaster-law>>.
- Protocol I Additional to the Fourth Geneva Convention. ICRC initiative on "The Missing" Treaty Law.
- "Respect." *Stanford Encyclopedia of Philosophy*. <<http://plato.stanford.edu/entries/respect/>>.
- Robins, Simon. "Towards Victim-Centred Transitional Justice: Understanding the Needs of Families of the Disappeared in Postconflict Nepal." *The International Journal of Transitional Justice* 5 (2011): 75-98.
- Rule 117 Accounting for the Missing Persons. IRCR initiative on "The Missing" Customary Law.
- Seenan, Gerard. "Mobile DNA Lab Piloted." *The Guardian*. Guardian News and Media Limited, 13 May 2005. 6 Nov. 2011. <<http://www.guardian.co.uk/uk/2005/may/14/ukcrime.gerardseenan>>.
- Stover, Eric, and Rachel Shigekane. "The Missing in the Aftermath of War: When Do the Needs of Victims' Families and International War Crimes Tribunals Clash?" *Revue Internationale De La Croix-Rouge* 84.848 (2002).
- Thailand Post-Tsunami Mental Health Group, comp. "Symptoms of Posttraumatic Stress Disorder and Depression Among Children in Tsunami-Affected Areas in Southern Thailand." *JAMA: The Journal of the American Medical Association* 296.5 (2006): 549-59.
- "The History of PCR." *Smithsonian Institution Archives*. <http://siarchives.si.edu/research/videohistory_catalog9577.html>.
- "Thai Government Response." *UN Thailand: Home*. 3 Dec. 2011. <<http://www.un.or.th/tsunamiinthailand/ThaiGovernmentResponse.html>>.
- "Tsunami Warning System." *Ocean Explorer*. National Oceanic and Atmospheric Association. 10 Nov. 2011. <<http://oceanexplorer.noaa.gov/edu/learning/player/lesson09/191a2.htm>>.
- United Nations. The World Bank. *Tsunami Thailand: One Year Later*. 2005. <http://siteresources.worldbank.org/INTEASTASIAPACIFIC/Resources/TsunamiTH_One-Year-Later.pdf> 30.

United Nations Country Team. Tsunami Thailand One Year Later: National Response and Contribution of International Partners. Bangkok. Dec. 2005. (Joint Publication of the UN Country Team, the World Bank, and the UNDP).

"USA QuickFacts." *State and County QuickFacts*. US Census Bureau.
<<http://quickfacts.census.gov/qfd/states/00000.html>>.

Van Hoving, Daniel, Lee A. Wallis, Fathima Docrat, and Shaheem De Vries. "Haiti Disaster Tourism – A Medical Shame." *Prehospital and Disaster Medicine*. May 2010.

Wagner, Sarah E. *To Know Where He Lies: DNA Technology and the Search for Srebrenica's Missing*. Berkeley: University of California, 2008. Print.

"What Is a Short Tandem Repeat Polymorphism (STR)?" *The Biology Project*. University of Arizona, 27 Oct. 2000.
<http://www.biology.arizona.edu/human_bio/activities/blackett2/str_description.html>.