Do Bones Speak? Forensic Scientific Translation of Mass Violence in Colombia

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Abstract: This article examines how forensic scientific translations reveal and make comprehensible mass political violence in Colombia. Through the labor of forensic anthropologists, acts of annihilation – unknowable brutality – are transformed into relatable, if partial, evidentiary narratives. This transformation unfolds in several phases, described in detail based on extensive forensic lab ethnography: translating the skeleton, interdisciplinary translation of the dead body, interrelation of evidence, and establishing patterns of violence. Through the translational work of forensic anthropologists, the trope "bones speak" comes to semiotically index the demand of many Colombians to break barriers of silence surrounding brutal acts of political violence that have long plagued the country.

Keywords: Violence, forensic science, forensic anthropology, medical anthropology, STS, translation, human rights, Colombia, Latin America.

"Good morning!" a Colombian shopkeeper greeted me, with a particular attention that I was sure was due to the fact that I was unambiguously *gringa*, (a woman from the United States). The all-purpose store was on the corner of a pedestrian road in the small riverside town in the northwestern Chocó province, not far from Colombia's jungle border with Panama. I was there to help locate and dig up the bodies of nearly one hundred people who had been victims of a wartime massacre in 2002. Recognizing me from the day before, the shopkeeper asked with whom I was in town. Clearly I was not there alone – that would be not only strange but also potentially dangerous. "I'm here with the *Fiscalia*, the [government] forensic team," I replied. "Do bones really speak?" the shopkeeper then asked suddenly. He smiled and continued, "Do they speak all by themselves?" "Well, not exactly," I responded, intrigued and a bit surprised. Another shopkeeper joined in. "But there are many things that you all can *deduce,"* she offered. "Exactly, you have to interpret the bones," I replied. "This region is one of the worst affected by war," the first shopkeeper told me, as much for information as a warning. I nodded, thanked them, and headed towards the dock to board the motorboat that would take me, with the rest of the *Fiscalia* team, down river for that day's exhumations.

It is commonly said within Colombia, "the entire country is one big mass grave." This may well be true, given the more than half a century of internal political warfare that has

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plagued it, which in turn has been complicated by and intertwined with drug war violence. But many of the graves resulting from political violence remain clandestine, hidden from public view or official investigation. Between the Colombian state, right-wing paramilitaries, and leftist insurgent groups the Armed Revolutionary Forces of Colombia (FARC) and the National Liberation Army (ELN), official sources report that over 268,000 Colombians were killed and an astonishing 60,630 were "disappeared," or taken for presumably political reasons never to be heard from again.[2] Right wing paramilitaries have been found responsible for the highest percentages of violence against civilians and some of the most brutal systematic practices of violence.[3] The Colombian state and the FARC have also repeatedly been found responsible for atrocities and violations of human rights.[4]

The notion that bones "speak" – which is to say, once unearthed they have the ability to tell their stories from beyond the grave – highlights the potential of forensic science to aid in criminal investigations of war crimes, by providing material evidence from dead bodies.[5] Yet it also obscures the fact that forensic anthropologists are the agents responsible for "listening to" and interpreting these bones.[6] This article explores how acts of annihilatory mass violence are translated into comprehensible, if partial, narratives through the labor and daily practices of Colombian forensic anthropologists. Anthropologists studying language and science alike have theorized that translational practices inevitably invoke social meanings as they mediate between various realms of knowledge and action.[7] Translation has been described as a "sameness-in-difference";[8] a necessarily incomplete process of conveying culturally informed meanings, or "semiotic partials";[9] a mobile process of contextual dis- and re-embedding;[10] and multifaceted transformations that draw on diverse (and often

[2] Registro Unico de Víctimas (RUV), "Víctimas por tipo de hecho victimizante," *Red Nacional de Información* (2017), available at <https://rni.unidadvictimas.gov.co/RUV>, accessed on September 1, 2017. Centro Nacional de Memoria Histórica (CNMH), *¡Basta Ya! Colombia: Memorias de guerra y dignidad,* (Bogotá, Colombia: Imprenta Nacional, 2013).

[3] Helka Alejandra Quevedo Hidalgo, "Escuela de la muerte: Una mirada desde la antropología forense," *Universitas Humanística,* 66 (2008). Helka Alejandra Quevedo Hidalgo, *Textos corporales de la crueldad: Memoria histórica y antropología forense* (Bogotá, Colombia: Centro Nacional de Memoria Histórica, 2014). CNMH, "¡Basta Ya! Colombia".

[4] Centro Nacional de Memoria Histórica (CNMH), "¡Basta Ya! Colombia."

[5] Zoe Crossland, "Evidential Regimes of Forensic Archaeology," *Annual Review of Anthropology* 42 (2013).

[6] Claire Moon, "Interpreters of the Dead: Forensic Knowledge, Human Remains and the Politics of the Past," *Social & Legal Studies* 22 (2013) 2:149–69.

[7] Susan Gal, "Politics of Translation," *Annual Review of Anthropology* 44 (2015) 1:225-240.

[8] Susan Gal, "Processes of Translation and Demarcation in Legal Worlds," *in Translating the Social World for Law*, ed. E. Mertz, W. Ford, and G. Matoesian (Oxford, Oxford University Press, 2016): 216-234.

[9] Michael Silverstein, "Translation, Transduction, Transformation: Skating 'Glossando' on Thin Semiotic Ice," in *Translating Cultures: Perspectives on Translation and Anthropology*, ed. P. Rubel and A. Rosman (London, Berg, 2003): 75-106.

[10] Matthias Kaufmann and Richard Rottenburg, "Translation and Cultural Identity," *Civiltà Del Mediterraneo* 23 (2013) 1/2.

competing) epistemologies.[11]

This article argues that Colombian forensic anthropologists transform acts of deadly – and therefore fundamentally unknowable – violence into medicolegal evidentiary narratives by engaging in a variety of translational practices that remain largely-obscured both because they are carried out behind fortified lab walls and because they tend to resist standardization. The resulting evidentiary narratives are generative but also incomplete insofar as they are rigidly shaped and constrained by legal and forensic scientific regulations. The scientific findings to be translated into criminal evidence are only those which the court demands, i.e., the identity of the person and information related to the cause of death. Moreover, even the best forensic methods can never make the experience of a murder truly known. Still, the courtroom-ready criminal evidence that results from forensic scientific translational processes undeniably produces accounts of violence that otherwise would never exist.

Below, I outline four phases of forensic scientific translation with a specific focus on the labor of lab-based anthropologists. I consider forensic scientific translation processes to include a variety of practices, in which forensic anthropologists not only interpret skeletonized remains according to scientific standards and case-specific contexts, but also touch and handle bones, place and re-place them in controlled laboratory environments, negotiate with other specialists, and navigate scientific and legal institutions. Through engagement with these forensic scientific colleagues and dead bodies, forensic anthropologists mediate between unknowable violence and various hierarchized domains of scientific and legal expertise. I focus primarily on forensic anthropologists, but they by no means work alone. They are in regular dialogue with other forensic scientists, including pathologists (forensic doctors), dentists, and geneticists.

This article is based on seventeen months of ethnographic fieldwork on forensic scientific investigations of mass violence in Colombia between 2015 and 2017, where I collaborated with forensic specialists at Colombia's National Institute for Legal Medicine and Forensic Sciences (INMLCF) for ten months. I chose to work with the anthropologists of the INMLCF because of my own background as a forensic anthropologist in Guatemala, where I investigated war crimes at the Forensic Anthropology Foundation of Guatemala (FAFG) from 2007-2011. There, I was based in the lab but also traveled regularly to assist with forensic archaeological exhumations of the dead and interact with the families of the deceased.

Given my extensive experience in Guatemala, my positionality as an ethnographer in the setting of the forensic anthropology lab in Colombia was complex. I entered the INMLCF with the ability to perform as an "expert".[12] I often found myself formulating my own informed, expert opinions on cases almost inadvertently, even though, due to Colombian legal restrictions, I did not conduct any casework myself. My direct interactions with evidence were limited to assisting anthropologists by cleaning bones, or laying out skeletons in anatomical position on lab tables. Occasionally, I would participate in conversations about how to interpret particular skeletal phenomena – such as the position of the body when struck

[11] Judith Farquhar, "Knowledge in Translation: Global Science, Local Things," in *Medicine and the Politics of Knowledge*, ed. S. Levine (Cape Town, HSRC Press, 2012): 153-170.
[12] E. Summerson Carr, "Enactments of Expertise," *Annual Review of Anthropology* 39 (2010) 17-32.

by a bullet – with my interlocutors, and in these instances, it is possible that my "expert" status contributed to their analyses.

This "insider" position, as well as my identification with and felt allegiance to the Colombian forensic anthropologists, may have produced biases within my work that skew towards the experience and opinions of those anthropologists over those of other forensic professionals. On the other hand, the Colombian forensic institutions themselves were new to me, and so the vast majority of my learning at the INMLCF had to do with inter- and intra-institutional politics insofar as they concerned how forensic cases were handled, and how such politics interconnected with the translational practices described below. While I was more attuned than a non-expert would have been to how these dynamics affected forensic practice, the particular aspects of these tensions were specific to the Colombian context, and my analysis of them was not meaningfully swayed by my experiences in Guatemala.[13]

Mass Violence and Transitional Justice in Colombia

The signing of Peace Accords between the Colombian government and the Revolutionary Armed Forces of Colombia (FARC) at the end of 2016 marked a promising turning point toward the end of the longest official civil war of the modern era. The process, however, was quite contentious. The Accords were quietly pushed through the Colombian Congress a few months after the historic rejection of their first iteration in a national plebiscite vote. At the time of this writing, the National Liberation Army (ELN) has yet to demobilize, and large portions of the Accords have been dismantled in highly politicized congressional battles. Colombia continues to find itself in a complex transitional justice process in which murders of labor leaders, social organizers, and human rights defenders are sharply on the rise.[14] Moreover, paramilitary successor groups known as "Criminal Bands," or BACRIM, operate throughout the country, having swiftly filled the gap left by the 2005 paramilitary demobilization process known as the "Justice and Peace" law.[15] Paramilitaries have long been denounced as the illegal war machine for the Colombian state, doing the "dirty work" of the Colombian military.[16] National and international human rights groups have documented collusion between the state and paramilitaries, particularly in cases of massacres and extrajudicial executions, although the Colombian state continues to resist official recognition of its role in

[13] Given the years of experience that I gained working as a forensic anthropologist in Guatemala and my subsequent decision to conduct ethnographic research on the same topic in Colombia, it would certainly be possible to provide some kind of comparative analysis. Unfortunately such an analysis is beyond the scope of this article, but I do acknowledge the rich potential for such analysis in future presentations of this research.

[14] Human Rights Watch, *World Report 2018* (USA, Human Rights Watch, 2018).

[15] Soledad Granda, Jorge A. Restrepo, and Alonso Tobón García, "Neoparamilitarismo en Colombia: Una herramienta conceptual para la interpretación de dinámicas recientes del conflicto armado colombiano," in *Guerra y violencias en Colombia: Herramientas e interpretaciones,* ed. J. Restrepo and D. Aponte (Bogotá, Colombia: Pontífica Universidad Javeriana, 2009): 467-500.

[16] Aldo Civico, *The Para-State: An Ethnography of Colombia's Death Squads* (Oakland, CA: University of California Press, 2015).

rights violations.[17]

Colombian forensic investigations of wartime violence are distinctive within Latin America because state institutions have claimed their sovereign right to conduct all forensic processes, sidelining most efforts of forensic non-governmental organizations (NGOs). This contrasts with forensic anthropology efforts led by NGOs in neighboring countries, including Argentina, Peru, and Guatemala. Yet as in those countries, Colombian relatives of the dead and disappeared – coming together through human and victims' rights' organizations – have long been the driving force behind efforts to propel forward forensic investigations of deaths and disappearances.[18] A large portion of the Peace Accords (Section V, or *Punto V)* was constructed with the input of a number of these relatives. The Accords promised mostly symbolic reparations to victims of wartime violence, including "indirect victims" such as the families of the disappeared. Parts of Section V[19] responded to relatives' demands to locate and identify the dead and disappeared, specifically through the creation of a new, independent investigative body, the Unit for the Search of Disappeared Persons (UBPD). Measures to increase the rate and quality of forensic investigations into wartime deaths and disappearances began more than a year before the final signing of the accords, thanks to this agreement. Much of this task fell to institutions of the state, including the INMLCF during my time there.

Translational Practices in Forensic Anthropology

For forensic anthropologists, scientific interpretation is one of the least straightforward aspects of their jobs, and as such it is a common topic of discussion in the lab. To most anthropologists, "interpretation" refers to practices by which they make meaning of qualitative and quantitative data that result from applying various forensic scientific methods to sets of human remains. Interpretation allows forensic scientists – particularly in the lab – to transform amalgamations of data into conclusions that contribute to the overarching medicolegal goals of forensic science: to identify human remains and reconstruct death events. In this conceptualization of interpretation, analytical processes and scientific procedure are foregrounded. Other actions are minimalized or ignored, however, including

[17] Human Rights Watch, *The 'Sixth Division': Military-Paramilitary Ties and U.S. Policy in Colombia*, (New York: Human Rights Watch, 2001). Robin Kirk, *More Terrible than Death: Massacres, Drugs, and America's War in Colombia* (United States of America: PublicAffairs, 2004). Jerry M. Laurienti, *The U.S. Military and Human Rights Promotion: Lessons from Latin America* (Westport, CT & London: Praeger Security International, 2007). Winifred Tate, *Drugs, Thugs, and Diplomats: U.S. Policymaking in Colombia* (Stanford, CA: Stanford University Press, 2015).

[18] Winifred Tate, *Counting the Dead: The Culture and Politics of Human Rights Activism in Colombia* (Berkeley, Los Angeles & London: University of California Press, 2007).

[19] Specifically, those outlined in "Accord 062," a press release from the negotiations between the Colombian government and the FARC: La Mesa de Conversaciones de la Habana,"Comunicado Conjunto #62," *United Nations High Commissioner for Human Rights* (Havana, Cuba: 2015), available at <http://www.altocomisionadoparalapaz.gov.co/mesadeconversaciones/PDF/comunicado-conjunto--1445137230.pdf>, accessed October 20, 2017.

practices such as touching and manipulating bones within the lab, regular discussions and debates among anthropologists about their cases, and the ways that these professionals mediate the scientific, legal, and institutional logics in which their work is embedded. For this reason, I use "translation" as a term that encapsulates all forensic scientific practices, including but not limited to interpretation. This section illuminates the forensic scientific translation black box[20] by categorizing practices into four phases that form integral parts of the daily work of lab-based forensic anthropologists, with particular emphasis on their casework related to wartime violence. I then demonstrate how specific political structures and tensions in Colombia are simultaneously supporting and hampering such forensic scientific processes.

Forensic translation is unique to every dead body and every death incident. Because of this, techniques for interpretive analysis beyond the level of individual bones or skeletons are rarely written about in the forensic anthropological literature, except in published case examples.[21] Interpretive analyses are so unique and complex that they tend to resist standardization. Clear procedures for interpretive analysis have not been developed because they cannot be applied uniformly to all cases. Interpretive practices involve a degree of subjectivity (always sustained by and within the constraints laid out by the data yielded from applied methods) that renders interpretive processes flexible and variable. All of these factors contribute to making interpretation an obscured part of forensic anthropological analysis.

Despite – or perhaps precisely because of – this apparent obfuscation, the complex nature of interpretative practices ends up generating some of the most common and important discussions within forensic anthropology labs. Such conversations, I contend, are so common that they are vital to forensic anthropology "lab life"[22] and constitute an integral aspect of translation of violence into medicolegal narrative. Like my interlocutors, I have participated in and listened to innumerable interpretive discussions within forensic anthropology labs, which are rarely visible to the external eye. INMLCF forensic anthropologist Maria[23] explained the nature of debates that occur when interpretations of the same osteological phenomenon differ between such specialists:

> "Sometimes there is a discrepancy in [our] interpretations from what we [each] observe. Everyone presents their points of view. They defend their points of view. Then it's the decision of the *perito* [forensic specialist legally responsible for the case]. They may or may not accept the suggestion of the person who made the correction, because at the end of the day, the person

[20] Bruno Latour, *Science in Action: How to Follow Scientists and Engineers Through Society* (Cambridge, MA: Harvard University Press, 1988).
[21] Dennis Dirkmaat, *A Companion to Forensic Anthropology* (West Sussex, UK: John Wiley & Sons, 2012). Erin H. Kimmerle and Jose Pablo Baraybar, *Skeletal Trauma: Identification of Injuries Resulting from Human Rights Abuse and Armed Conflict* (Oxford: CRC Press, 2008).
[22] Bruno Latour and Steve Woolgar, *Laboratory Life: The Construction of Scientific Facts* (Princeton, NJ, Princeton University Press, 1979).
[23] To protect all parties involved, this is a pseudonym as are all names used in this article.

> who creates the final report [*el peritaje*] is the one who has to defend their findings in court".[24]

Such interpretive disputes within labs index a scientific environment that tolerates a relative degree of disagreement and ambiguity compared to its courtroom counterpart. As forensic anthropologists finalize their interpretations in legal reports (*peritajes*), any uncertainty must be expunged or obscured, since what is demanded by the courtroom is a singular scientific "truth" that must be presented as undisputable evidence. Precisely for this reason, the lab – with the social and professional interactions that take place in it – is a critical site of forensic scientific translation.

The following four categories of forensic scientific translational practice take place mostly in the lab. They are organized here from micro to macro in both the anatomical and conceptual sense. They begin with the smallest features that forensic anthropologists analyze in bones – sometimes literally microscopically – and move towards, ultimately, the reconstruction of death events that may constitute acts of mass violence. Later phases of translation consider the potential interrelationship between multiple bodies that may reveal connections between specific crimes and broader patterns of wartime violence. The order of these phases also approximates the chronological order of forensic laboratory procedure, although in practice there is a constant flowing back and forth between each of these phases as they are developed over the course of a given case. These phases include:

1. Translating Bones
2. Translating the Skeleton
3. Interdisciplinary Translation of the Dead Body
4. Translating Context: Interrelating Evidence and Establishing Patterns of Violence

Ultimately, these translational phases constitute and contribute to the production of criminal evidence through forensic scientific, medicolegal practice.

Translating Bones

The first phase, *translating bones*, occurs as forensic anthropologists examine bones one at a time. This occurs as the skeletonized body is moved into and through the forensic lab. It is meticulously cleaned, laid out in anatomical order on an examining table, and every bone present is labeled with the body's case number. This set of translational practices considers the dead body as – quite literally – a collection of disjointed anatomical structures, or individual bones. Practices in this realm are based on established forensic anthropological methods, standards, and literature. The application of such methods demand relatively little interpretation since most of them utilize either quantitative procedures based on measurements, or qualitative approaches that require the categorization of specific

[24] This and all subsequent interviews were conducted in Spanish and the included quotes are translated by the author.

osteological features.[25] Both quantitative and qualitative methods tend to provide statistical probabilities for the results that they yield. This is especially true in the United States since the 1993 Daubert law that regulated the submission of witness testimony evidence, and a related 2009 federal mandate to demand increased statistical backing for forensic scientific findings to ensure their admissibility as criminal evidence.[26] Other practices at this initial level are purely descriptive with regards to individual bones and the features and anomalies they present, which then provide the bases from which interpretive claims can be made. Ideally, anthropologists create written descriptions of fractures or other abnormalities before drawing any conclusions about what such features might mean, including whether they occurred before, after, or around the time of death. In this phase, each forensic anthropological method and description is applied individually to one bone at a time, and the interpretive labor is minimal.

Translating the Skeleton

The second phase is translating the skeleton, a process in which findings from the first interpretive phase are considered in conjunction with one another. This produces a broader picture of the dead body, both as an individual person to be identified and what the cause of death may have been. Key to this phase is that it considers bones as interrelated parts of a skeletonized dead body as a whole, rather than discrete objects of inquiry. It is precisely for this reason that I utilize "dead body" and "skeletonized remains" in many instances rather than "bones," because the idea of disassociated bones detracts from the idea that what is being analyzed is in fact a dead person. Concordantly, anthropologist Catalina explained that one must look at "the bone as part of a body, of an organism, as something that is fulfilling a specific function". Claudia added:

> "I think we have to keep in mind that [human bones] are cadavers in a different state than those we see in the autopsy room, but they *are* cadavers and we have to treat them as such. …They are skeletonized cadavers, [but] we have to look at them as a whole".

Within a skeletonized cadaver, individual bones constitute tangible parts of a greater whole. The skeleton is considered complete if all bones are present, but skeletonized remains are also necessarily incomplete since the soft tissues that connect the bones have decomposed. The full structure of the body must be imagined as a whole during examination,

[25] Jane E. Buikstra and Douglas H. Ubelaker, "Standards for Data Collection from Human Skeletal Remains" (Arkansas Archeological Report Research Series, 1994). Elizabeth A. DiGangi and Megan K. Moore, *Research Methods in Human Skeletal Biology* (Oxford & Waltham, MA: Academic Press, 2012). Dirkmaat, *A Companion to Forensic Anthropology*. Kathleen J. Reichs, *Forensic Osteology: Advances in the Identification of Human Remains* (Springfield, IL: Charles C. Thomas, 1998).

[26] Angi M. Christensen and Christian M. Crowder, "Evidentiary Standards for Forensic Anthropology," *Journal of Forensic Sciences* 54 (2009) 6:1211-6; National Academy of Science, *Strengthening Forensic Science in the United States: A Path Forward,* (Washington, DC, The National Academic Press, 2009).

especially when considering how physical marks of bone trauma might have come to be. The rib cage is a particularly good example of this. In the skeletonized body, ribs appear to exist as discrete entities upon which traumas of all kinds – sharp force, blunt force, gunshot wounds, etc. – are frequently observed. But in the live body, the ribs work interdependently with one another, the vertebral column and other hard and soft tissue structures to form the protective, strong yet flexible thoracic (rib) cage. One blow to the rib cage can affect multiple bones at once, thus it would be incorrect to count the number of fractures on the ribs and consider that to be the minimum number of traumatic impacts. Many injuries to ribs have been misinterpreted by forensic anthropologists because of the complex biomechanics of how the rib cage as a whole reacts to traumatic stress.[27]

Another aspect of this translational phase is the process of interrelating and reconciling results yielded by the application of various quantitative and qualitative forensic anthropological methods applied during the previous phase (individual bone analysis). This involves compiling, comparing, and merging results. This process is sometimes straightforward if, for instance, the age-at-death generated from methods applied to the os coxae (hip and pelvic bones) coincide with those applied to other areas of the skeleton. But often results are more complex. They can conflict with one another, or even more difficult to predict, the application of methods can yield erroneous results if the forensic anthropologist fails to recognize an anomaly on a bone structure routinely utilized for analysis. Skeletal interpretation at this phase is thus crucial to how violence inscribed on particular bodies is translated into medicolegal narrative.

Forensic anthropologists often said that their practices will "give us the truth". The "truth" is a commonly used term with specific meaning in this context. It implies that "what really happened" that led to the individual's death was kept hidden by perpetrators and therefore is unknown when the body enters the lab, but that translation processes allow forensic specialists to reveal these clandestine acts of past violence. In other words, for forensic anthropologists, to reveal the "truth" is synonymous with translation practices that produce evidentiary narratives of violent acts.

Interdisciplinary Translation of the Dead Body

The third translational phase is the interdisciplinary translation of the dead body, in which forensic anthropologists participate but do not necessarily lead. At the INMLCF, forensic doctors and dentists are in charge of amalgamating and reconciling findings from each of the forensic specialties that works on a given dead body, in order to identify the dead body and establish the cause of death. The details of this process are similar to what forensic anthropologists do in the previous phase, but here forensic anthropologists collaborate with other specialists as well.

An "interdisciplinary approach" to forensic medicine and forensic science was highly

[27] Jennifer C. Love and Steve A. Symes, "Understanding Rib Fracture Patterns: Incomplete and Buckle Fractures," *Journal of Forensic Science* 49 (2004) 6:1153-8.

stressed among higher-ups at the INMLCF. One of the forensic doctors in charge of some of the most politically sensitive cases stated publicly that beginning in 2011, the INMLCF would be implementing an "interdisciplinary forensic approach by pathologists, anthropologists, dentists and geneticists". Ideally, this meant that these specialists would all work on a body simultaneously with mutual respect for the specific knowledge sets of each discipline. Nevertheless, this model remained the exception rather than the norm in Colombia. Although anthropologists told me that there were increasing instances of interdisciplinary communication, I rarely saw doctors in the anthropology lab. When I asked who makes decisions about identification of bodies, anthropologist Claudia responded, "The doctor. …Supposedly the ideal [scenario] is that these identification reports are truly interdisciplinary, but in reality it's the doctor who collects all the information". Moreover, forensic anthropological final reports were not signed by the anthropologists themselves, but the doctors who oversaw those cases.

This dynamic points to clear performances of expertise within domains of expertise[28] at the INMLCF, in which forensic doctors and dentists are ranked above forensic anthropologists. Forensic geneticists also tend to be considered of higher prestige since DNA identification is widely perceived to be the gold standard for resolving forensic cases, despite its many limitations and inability to function without collaboration with other forensic specialty areas.[29] This results in a degree of tension between the disciplines within the Institute. As Maria explained, "The doctors are the ones who make claims and don't let the anthropologists [say anything]". She continued:

> "The problem is that here anthropologists have a bad reputation in general, like anthropology is more laid-back. There is this crazy idea that the doctor and even the dentist have a firmer handle on things because they are health sciences and anthropology is not".

INMLCF forensic anthropologists have extensive training in osteology and biological sciences, but there is a tendency within the Institute to perceive them as having less knowledge than doctors because their training does not involve medical school. Institutionally, then, the specific knowledge sets that anthropology contributes to the forensic process as a whole are implicitly considered of lesser value than those of the medical and genetic disciplines. Furthermore, the anthropologists of the INMLCF have a great deal of exposure to forensic investigations of war crimes, often more than their pathologist counterparts. During my ethnographic research, I noted that at least a third of the members of the INMLCF forensic anthropology team had experience – often extensive – in investigations of human rights violations areas outside Colombia, including in postwar Peru

[28] E. Summerson Carr, "Enactments of Expertise," *Annual Review of Anthropology* 39 (2010) 17-32.
[29] Michael Lynch, "God's Signature: DNA Profiling, the New Gold Standard in Forensic Science," Endeavour 27 (2003) 2:93–7. Michael Lynch, "Science, Truth, and Forensic Cultures: The Exceptional Legal Status of DNA Evidence," *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences* 44 (2013) 1:60–70.

and in Bosnia with the International Criminal Tribunal for the former Yugoslavia (ICTY).

The tensions that result from the inequitable assessment of knowledge sets within the Institute ultimately disrupt the ability of all forensic professionals involved to piece together casework in as seamless a manner as they could. Interdisciplinary translation of the dead body was nominally and partially achieved at the INMLCF, but was not as fluid a process as it could potentially be. Many anthropologists told me that it was an improvement to the way the Institute operated just a few decades ago, but it was still far from ideal.

Translating Context: Interrelating Evidence and Establishing Patterns of Violence

The fourth and final phase of forensic scientific translation is translating context. This involves a) the comparison of lab results to antemortem information, crime scene findings, and sometimes witness testimony collected from the field, and b) compiling cases to deduce patterns of violence across multiple dead bodies that could constitute human rights violations and war crimes. These subcategories are distinct, but in cases of mass graves – or any case involving more than one individual – they cannot be unpaired. Colombian lab-based forensic anthropologists at the INMLCF regularly expressed great frustration at the scarcity of information that they would receive about the field phase of forensic investigations when they analyzed a body.

Interpreting findings in the lab requires taking into account the context of the crime as it was documented at the recovery scene, or the site where the body was discovered. Lab anthropologists are not typically present at recovery scenes or exhumation sites, and problematically, at the INMLCF they rarely receive all of the contextual crime scene documentation that they need to put cases together in the most comprehensive way possible. On the occasions that I was permitted to see the case files of skeletons that were laid out for analysis in the lab, I was confounded at the sparse antemortem and recovery scene data included. Antemortem data is biological information about the missing or murdered person during life (such as their sex, age, height, and medical history), and is usually recorded by criminal investigators when they conduct interviews with relatives of the missing person. When this information is available in robust form, it allows forensic scientists in the lab to compare antemortem and postmortem data to identify the individual in question. Similarly, the context of the recovery scene discloses the *in situ* locations and positions of bodies, both individually and in relation to one another. These details are important not only so that lab-based anthropologists can better understand how a death happened, but also to problem solve in case there was "commingling," the intermixing of bones from more than one individual within a grave.

The division of cases among discrete forensic teams – as cases moved from investigative fieldwork to the lab and then back to criminal investigators – created bureaucratic tensions and complicated the already arduous task of integrating findings to reconstruct death events. There was never any official mechanism that allowed or encouraged forensic archaeologists who were at the crime scene, investigators who took testimony in the field, and lab-based forensic anthropologists to come together to discuss

how each of their findings from a single case might be related to one another. The criminal investigators and prosecutors of the *Fiscalia*, who are not forensic scientists, were left to connect the dots themselves. I consider the lack of integration of forensic scientific findings among diverse areas of expertise to have been the most problematic aspect of forensic investigations in Colombia that I witnessed. It hindered identification processes, resulting in a piling up of unidentified dead bodies in the lab from forensic cases that had yet to be resolved.

Likewise, a "lack of inter-institutional communication" was cited by nearly all anthropologists I spoke with (even those from forensic institutions other than the INMLCF) as one of the most severe problems with forensic investigations in Colombia. Maria of the INMLCF explained:

> "There is little inter-institutional coordination and that is very harmful. …A colleague has cases like that. Cases where she has part, the CTI [of the *Fiscalia*] has others, the police have another. It's a problem to have one single case divided among three different entities. …The way the state is structured is very problematic".

Moreover, others say that many reports of preliminary investigation into crimes that do end up making it to the lab are inadequate. Speaking about the work of the investigators of the *Fiscalia,* anthropologist Alejandro said:

> "They conduct investigations without [considering] context, without any kind of guidance [from] preliminary [information]. And the thing is that as a country in conflict it is impossible to conduct [these] investigations because they'll kill you, and that's the rationale that's made many people resign themselves to not receiving [case] information, and doing things any old way. And that's a problem".

The dangers of conducting forensic investigations are real, especially for the criminal investigators, archaeologists, and anthropologists that conduct exhumations at remote sites across the country. But at the same time, if insufficient information is collected about who the body in question might belong to, how they died, who might have witnessed the death or burial, or what the witnesses have to say, then evidence that might be crucial to identifying the body and reconstructing death events is lost before it is ever collected. Is it worth exhuming if not enough preliminary investigation can be completed to identify dead bodies? Is it better to exhume at the risk of accumulating unidentified bodies, or to leave bodies in the ground until more thorough preliminary investigations can be conducted?

This dilemma is magnified when considering the second aspect of contextual forensic translation: interpretation of multiple dead bodies that could reveal patterns of wartime mass violence. Forensic anthropologist Iliana explained:

> "Sometimes cases come in [to the lab] that [don't appear] to be interrelated, and [it turns out] it was the same [case] and no one is informed of that, like everyone figures out what they have to figure out and that's that. And the information isn't handed over in a more organized way, so I think that's a serious problem because it limits [us] a lot. It limits the case itself, like if you [go] to court and you have ten doctors saying different things about the same case".

When cases are divided up among different institutions or even among different specialists within the same institution without sharing that information, death events that resulted in multiple victims become exponentially harder – or even impossible – to reconstruct. The separation of corpses discovered at the same recovery site is quite problematic and entirely preventable.

The reluctance or inability of Colombian governmental forensic institutions to search for patterns among distinct cases also prevents forensic science from being able to contribute as much as it can to investigations of human rights violations. [30] During my time in the INMLCF, for instance, three skeletonized corpses were brought in separate cases over the course of a few weeks. Each was assigned to a different forensic anthropologist since the police had recovered the bodies one at a time. But as the anthropologists worked these cases and began talking with one another about them in the lab, it became clear that there was likely a connection between the cases. They had each been found near the same trash dump on the outskirts of Bogota, and each of them had an execution style gunshot wound to the back of the head. Thanks to the active, collaborative lab life of the anthropology team, they flagged these cases as likely related to one another, which shifted the direction of the criminal investigation away from individual murders toward violence likely carried out by a particular group targeting apparently defenseless victims.

The four phases of forensic scientific translation of mass violence that have been outlined here index the potential of forensic sciences to transform not only the *what happened* of mass violence, but also how distinct acts of violence came to fruition and – perhaps most notably – how they were related to one another in the context of war crimes. Ultimately, forensic scientists have translational potential to work in conjunction with other areas of expertise to expose patterns of war that could reveal human rights violations and even implicate specific armed groups, agencies, or governments in systematic practices of mass violence. Yet in the case of Colombia, the division of cases among agencies and the lack of communicative channels among specialists at different points of the investigative process disrupted and limited the forensic sciences – and forensic anthropology in particular as both a field and lab science – in the scope and impact that they could achieve.

[30] One notable exception is: Helka Quevedo Hidalgo*, Textos corporales de la crueldad: Memoria histórica y antropología forense* (Bogota, Centro Nacional de Memoria Historica, 2015).

Production of Forensic Science Evidence

The final and culminating stage of forensic scientific translation is the production of evidence, which is the primary legal obligation of the forensic anthropologist. This means not only putting together interpretive findings in the scientific sense, but also the act of transforming the physical, three-dimensional dead body into a written and photographic, two-dimensional documentary account. Documentary evidence stands in for both the dead body and the violence inscribed on it. In other words, this kind of evidence acts as if it *is* the dead body itself, or perhaps even the violent act that caused the death. This mimetic property of bodily evidence can prove somewhat misleading,[31] but it allows for the preservation of otherwise ephemeral material evidence of violence into the future. This is vitally important in cases of war crimes and mass violence, since it is often not until years or decades after violent acts take place that such crimes are investigated.[32]

Given the co-construction of all forensic sciences and the legal system(s) in which they operate,[33] the constraints of a given legal system limit the types and amount of information that forensic scientists, as expert witnesses, may present as evidence. In order to maintain legitimacy in the eyes of the court, Colombian forensic scientists must write their reports in a strict medicolegal register. Even definitive findings can appear dubious in the sometimes-convoluted scientific terminology that provides probabilities and suggests conclusions rather than definitively states them. For example, forensic genetic (DNA) identification results are always phrased in terms of probabilities and likelihood ratios. As one published INMLCF genetic identification report states:

> It is 11,354 times more likely that the individual to whom the skeletal remains belong is the biological son of the [living] individual who provided the [DNA] reference sample, than that it belongs by chance to another member of the population.[34]

To the trained eye, this means that the probability that the body does *not* belong to the person in question is so low that it is essentially impossible that it is not that person. In

[31] Zoe Crossland, "Of Clues and Signs: The Dead Body and Its Evidential Traces," *American Anthropologist* 111 (2009) 1:69–80.

[32] Burt, Jo-Marie, this volume. Ermengol Gassiot Ballbè, "Arqueología de un silencio: arqueología forense de la Guerra Civil y del Franquismo," *Complutum* 19 (2008) 2:119–30. Melanie Klinkner, "Proving Genocide? Forensic Expertise and the ICTY," *Journal of International Criminal Justice* 6 (2008) 3:447–66. Ellen L Lutz and Caitlin Reiger, *Prosecuting Heads of State* (Cambridge; New York: Cambridge University Press, 2009).

[33] Tobias Kelly, *This Side of Silence: Human Rights, Torture, and the Recognition of Cruelty* (Philadelphia: University of Pennsylvania Press, 2012). Sheila Jasanoff, "The Idiom of Co-production," in *States of Knowledge: The Co-Production of Science and the Social Order* (New Jersey, Routledge, 2004).

[34] Martha Liliana Acevedo Neira and Blanca Yanine Bocanegra Cruz, "Uso del ADN forense en la Policía Nacional para identificación de Alias 'Édgar Tovar,'" *Revista Logos Ciencia & Tecnología* 2 (2010) 1:134–5.

other words, the DNA test has resulted in positive identification. The cautious medicolegal terminology can be confusing both to lay people and lawyers alike, and creating a dualistic dynamic between expert and non-expert.[35]

I observed among Colombian forensic anthropologists a generalized high level of concern and even anxiety about the exact ways in which they interpreted and presented findings. Not only would their reports become criminal evidence, they could also be called in to the court as expert witnesses at any time. Many anthropologists reported to me that the first question that any scientist should ask themselves is, "Is it possible that my interpretation is incorrect?" Moreover, there was prevalent worry among forensic anthropologists of "What if I'm wrong?" They were concerned that if they over-stated their interpretations, they could be proved incorrect – or at least not be able to prove their findings correct "beyond reasonable doubt." According to comments made to me throughout my time in the lab, most considered that it was far better to be conservative in their interpretations rather than risk unintentionally overstating findings and later struggle to back them up if questioned in court.

So how do forensic anthropologists go about making decisions about how far to take interpretations in their daily practices as they translate violence into medicolegal narratives that become evidence? According to some anthropologists at the INMLCF, this is often a matter of how confident the forensic anthropologist in charge of the case feels in defending her interpretations. "It depends on my mood that day," forensic anthropologist Claudia told me one day, "on how confident I feel". To be conservative with interpretive practices is to be safe – protective of both one's professional reputation and perhaps of the case itself. But this type of overly conservative interpretation could, on the other hand, mean providing weaker evidence for court than one actually has on hand. In other words, to under-interpret and to over-interpret the dead body during the process of producing evidence are both potentially dangerous to the case in court. Translational practices and the evidentiary narratives they produce for court are therefore a delicate balance, which accounts for why they are a continuous topic of conversation and negotiation among forensic anthropologists in their daily laboratory practices.

A conservative interpretation of a bone trauma might read something like: "Multiple perimortem fractures were observed in the cranium, possibly caused by a high velocity impact." A bolder interpretation of the same skull, on the other hand, might read: "The perimortem fracture patterns observed in the cranium suggest that a minimum of one high velocity projectile, such as a bullet, entered, passed through, and exited the cranium, with a trajectory of posterior to anterior (back to front)." In the more conservative interpretation of this example, the anthropologist takes a more descriptive approach and avoids naming a specific injury pattern or stating the trajectory of the penetrating object. Such interpretations are designed to be incontrovertible, but in doing so they often fail to provide much context or detail. The advantage of the second, less conservative description is that it paints a clearer picture of what likely led to the death of the person. And assuming that it is correct – or by

[35] Karin Knorr Cetina, *Epistemic Cultures: How the Sciences Make Knowledge* (Cambridge, MA, Harvard University Press, 1999).

legal standards, defendable – it provides extremely strong evidence to support the established cause of death.

In other words, a less conservative approach to interpretation can be a very powerful tool in reconstructing death events. As one forensic anthropologist explained to me as we walked from the office building to the forensic lab, it's about doing everything possible to suggest what happened. In other words, one should aim to put together as many pieces as possible given the evidence at hand and presenting them in a way that heavily implies what happened, but without overstating it. The disadvantage of an overstated interpretation is that if it is later revealed that the injury (to follow our previous example) was not in fact a gunshot wound but, say, shrapnel from an explosion, this small error could be challenged in court and cause the legitimacy of the entire forensic report to come into doubt. Once, hovering over a lab table with Maria, I suggested that the fractured fragments of cranium that we were examining between our gloved fingers must have been the result of a gunshot wound due to the patterning of the fractures across the skull. The bone was quite eroded, however, so even though the fracture patterns appeared to me to be unquestionably caused by a high velocity impact, Maria was more cautious. "I wouldn't defend that in court," she stated. "But this," she continued, picking up a small, dense and clearly fractured petrous portion of the temporal bone (which forms the structure for the inner ear), "this I would take to court."

These anxieties and carefully calculated decisions about what scientific findings to claim as definitive evidence in a given case underscore the notion that the translational concerns of forensic specialists shape criminal evidence. Once evidence is in the hands of the court, law and science encounter one another in a new phase of "legal translation," in which forensic scientific translations are taken up in the legal arena, and further transformed for criminal proceedings. Legal translation of forensic evidence merits further study, but for our purposes here, it is sufficient to say that forensic scientists are extremely cautious about how they produce and present evidence of death events before permanently turning it over to the criminal justice system. On multiple occasions, I heard anthropologists in the lab say of their own hypotheses, "But what if this gets taken down in court?" The stakes are high for forensic scientific professionals. If the evidence they provide is proved to be (or successfully argued to be) unsustainable, their professional reputations – and even their jobs – are on the line.

Yet the concern I saw expressed more often than that was that the case itself would be at stake. Many forensic anthropologists felt not only a professional and scientific obligation to their work, but also a moral obligation to the case and the dead body as a person. I observed that forensic anthropologists tended to be quite attentive to the psychological needs of relatives of the deceased to find out the final fate of their loved ones, and for perpetrators of those murders to be brought to justice. Claudia stated that identifying the dead is important because "it gives that person back who they were, their right to have an identity, to be somebody in this world". Thus it is not only self-preservation that reins forensic anthropologists as they produce evidence. Their scientific translational practices and their reports that transform human remains into criminal evidence are accompanied by a deep concern for moral and criminal justice to be served.

The interrelation of individual cases to reconstruct violent events in Colombia is a task

usually limited to criminal investigators. Forensic anthropologists expressed frustrations to me about producing evidence for court in individual cases without a broader institutional commitment to consideration of how various cases might be connected. Maria suggested that a more integrated scientific and criminal investigative approach could shed light on the larger picture of how forced disappearance – as a particularly insidious form of institutionalized mass violence – has been used by armed actors as a strategy of war. She explained:

> "Here [at the INMLCF], we are very limited because we are not [criminal] investigators. … So you can have a lot of suggestions, a lot of interpretations, but no one is going to know that because that's not your job, and because everyone's roles are so hierarchical and so restricted that they can't exceed [the bounds of] their positions. And in that sense, well, a lot of things could improve if there were better inter-institutional coordination. I am also referring to 'integrality' in the sense of figuring out the operative [mechanisms] of forced disappearance at a regional level, at a national level. What are the structures [of the armed groups]? How have their *modus operandi* varied? And I know that there are many ideas, many suggestions, and many initiatives from *peritos* [forensic anthropologists] at least, but as a *perito*, you don't have time to investigate that, and the *fiscales* [criminal investigators] are so swamped that they don't investigate that way. Instead it's 'hurry up, find bodies, identify bodies, do exhumations, give the bodies back [to families].' But in reality that's not exposing what the purpose of forced disappearance [really] is".

Forensic anthropologists and other lab-based scientists at the INMLCF are generally prevented from participating in efforts to piece together the bigger picture of mass violence because their roles are limited to working discrete cases in order to produce criminal evidence about individual bodies. Whereas NGOs in Argentina, Peru, and Guatemala encourage a more integrated approach to their investigations, in Colombia, forensic scientific evidence has rarely transcended individual instances of violence to address broader issues of systematic political violence.

Conclusion

If bones can be said to "speak" through the labor of forensic anthropologists and other scientists who give them voice, they do so through particular sets of translational practices and in specific medicolegal registers. The idea of "speaking" also introduces the question of addressivity: who is listening? Forensic scientists are certainly listening, as are the criminal investigators who rely upon forensic scientific translations and their accompanying medicolegal reports. But perhaps more immediately and impactfully, Colombian relatives of the deceased, victims' and human rights advocates, and the imagined public sphere, like the shopkeepers mentioned in the opening, are eagerly attentive to what forensic science will reveal about people killed in the country's armed conflict.

To hear what bones have to say implies that locating and unearthing human remains

and analyzing the discovered bones will reveal an otherwise unknowable truth about the violent acts that led to a person's death. In the context of Colombia, "bones speak" is specifically used as a counterpoint to the silence that acts of political violence instill in the surrounding population, which they maintain for their own survival. Thus as medicolegal narrative accounts of violence come into being, they simultaneously shape the ways in which individuals, communities, and the nation remember such violence. Through the translational work of forensic anthropologists, the trope "bones speak" comes to index the demand of many Colombians to break barriers of silence surrounding brutal acts of political violence that have long plagued the country. Forensic scientific translational practices thus have great influence on how the Colombian nation comes to comprehend and remember the violence that it has undergone.

Forensic evidence making practices, particularly in the context of mass violations of human rights abuse, are complex processes that entail numerous social and political deliberations across various institutions and disciplinary forms of expertise. My research suggests that forensic scientific translation practices, as conducted within their current medicolegal framework in Colombia, are not yet achieving their maximum potential. The division of many forensic cases among different Colombian government agencies results in a silo effect that infringes upon the need for cross-institutional communication. The result of this – intended or not – is a disjuncture in understandings of political violence as systematic practice in Colombia.

Forensic anthropologists, however, are in a unique position to transcend this problem as translators both at the recovery scene and in the lab. Moreover, Colombian anthropologists are exceptionally poised to do so because of their collective experience investigating war crimes around the globe. Given the opportunity to work within more integrated investigative environments in Colombia – as they may well be with the nascent Unit for the Search for Disappeared Persons – they have the potential to reveal broader patterns of violence, greatly increasing the value and impact of this important work.