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Deep Forensics for a More-than-Human Justice*

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Abstract: *Buscadora* collectives in Mexico have developed unique and transformative forensic practices to search for their disappeared loved ones. We examine the work of three collectives, each working in distinct political, ecological, and historical contexts to better understand emergent forms of local citizen-led forensic practice. Attending to spaces, that exist alongside but exceed contemporary forensic practice, we critically reexamine the practice of forensics in the context of the humanitarian and forensic 'crisis' in Mexico. Drawing on ethnographic fieldwork and interviews with forensic scientists and *buscadora* collectives between 2015-2022, we develop three case studies that analyze the collectives' work in three registers: the (inter)relational, the geo-logic, and the more-than-human. We argue for the emergence of a deep forensics based on collective practices that privilege fragile, multi-valent forms of knowledge production, attend to slow violence, and move beyond an exclusively human-centered episteme. These alternative practices have the potential to displace the crisis time of contemporary state-led forensics and better document the entangled contexts of 'stratigraphic violence' in contemporary Mexico allowing for an emergent more-than-human justice.

Keywords: *Buscadoras*, citizen science, deep forensics, geo-logics, more-than-human, stratigraphic violence.

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Investigación forense profunda para una justicia más que humana

Resumen: los colectivos de buscadoras en México han desarrollado prácticas forenses únicas y transformadoras para buscar a sus seres queridos desaparecidos. Examinamos el trabajo de tres colectivos que trabajan en distintos contextos políticos, ecológicos e históricos para entender mejor las formas emergentes de la práctica forense local dirigida por ciudadanos. Al prestar atención a los espacios, que existen junto a la práctica forense contemporánea, pero que la exceden, reexaminamos de manera crítica la práctica forense en el contexto de la “crisis” humanitaria y forense en México. Desarrollamos tres estudios de caso que analizan el trabajo de los colectivos de buscadoras en tres registros: el (inter)relacional, el geo-lógico y el más que humano. La información para hacer este trabajo fue recopilada entre 2015 y 2022 y se constituye, por un lado, de trabajo de campo etnográfico y, por otro lado, de entrevistas con científicos forenses y colectivos de buscadoras. Argumentamos el surgimiento de una investigación forense profunda basada en prácticas colectivas que privilegian formas frágiles y multivalentes de producción de conocimiento, prestan atención a la violencia lenta y van más allá de una episteme exclusivamente centrada en lo humano. Estas prácticas alternativas tienen el potencial de desplazar la temporalidad de la crisis definida por la ciencia forense contemporánea estatal y de documentar mejor los contextos entrelazados de la violencia estratigráfica en México contemporáneo, lo que permite una justicia emergente más que humana.

Palabras clave: buscadoras, ciencia ciudadana, investigación forense profunda, geo-lógica, más que humana, violencia estratigráfica.

Investigação forense profunda para uma justiça mais que humana

Resumo: os coletivos de buscadoras no México vêm desenvolvendo práticas forenses únicas e transformadoras para buscar seus seres queridos desaparecidos. Analisamos o trabalho de três coletivos que trabalham em diferentes contextos políticos, ecológicos e históricos para entender melhor as formas emergentes da prática forense local dirigida por cidadãos. Ao prestar atenção aos espaços, que existem junto à prática forense contemporânea, mas que a ultrapassam, reexaminamos de maneira crítica a prática forense no contexto da “crise” humanitária e forense no México. Desenvolvemos três estudos de caso que analisam o trabalho dos coletivos de buscadoras em três registros: o (inter)relacional, o geo-lógico e o mais que humano. As informações para fazer esse trabalho foram coletadas entre 2015 e 2022, e se constituem, por um lado, de trabalho de campo etnográfico e, por outro, de entrevistas com cientistas forenses e coletivos de buscadoras. Argumentamos o surgimento de uma investigação forense profunda baseada em práticas coletivas que

privilegiam formas frágeis e multivalentes de produção de conhecimento, prestam atenção à violência lenta e vão mais além de uma episteme exclusivamente centralizada no humano. Essas práticas alternativas têm o potencial de deslocar o tempo de crise da ciência forense contemporânea dirigida pelo Estado e de documentar melhor os contextos vinculados da violência estratigráfica no México contemporâneo, o que permite uma justiça emergente mais que humana.

Palavras-chave: buscadoras, ciência cidadã, investigação forense profunda, geo-lógica, mais que humana, violência estratigráfica.

They said we were engaging in civil disobedience. But I think that if we, the families, the mothers, had not engaged in civil disobedience, there would be no clandestine graves in any part of this country. Of course, there would be thousands of disappeared people, but there would be not one clandestine grave without the defiance that motivated us to act.¹

(Araceli Salcedo, interview with authors, July 30, 2022)

Araceli reflected on the early days of her organizing as a *buscadora*, when she and other family members whose loved ones had disappeared, began searching for potential sites of clandestine burial. She was at a point of desperation after her daughter, Rubi, had gone out to a party one evening in early September 2012 and never came home. In what has been recognized as the common official response to femicide in Mexico, Rubi's disappearance was dismissed by the police who said she must be out drunk or have run off. In what Araceli described as "the terribleness of the authorities,"² they didn't even bother to record any information about her case or even Rubi's name (Salcedo, interview with authors, July 30, 2022). When Rubi disappeared and the local police dismissed her concerns, Araceli didn't know where to turn or what to do. Ten years later, at the time of our conversation, Araceli has become a self-taught expert in forensic science, appropriating tools from entomology, geospatial analysis,

1 The original in Spanish reads: *Decían que hacíamos desobediencia civil. Pero yo creo que si las familias, las madres no hubiésemos hecho desobediencia civil, en ninguna parte de este país existirían fosas clandestinas. Claro, claro, existirían miles de desaparecidos, pero no existiría ni una fosa clandestina sin la rebeldía que nos motivó a salir.*

2 The original in Spanish reads: *Lo terrible de las autoridades.*

archeology, forensic anthropology, and genetics in her search for Rubi and the other disappeared of Veracruz.

She acknowledges herself as one of the oldest members (*viejas*) of the *buscadora* movement in Mexico. She, along with the other *buscadoras* in her collective have helped identify hundreds of clandestine burial sites. They dedicate their time to searching for potential clandestine grave sites and then attending state-led excavations to ensure the Mexican police and forensic authorities conduct proper analyses, collect remains, and work to identify them. Ten years of searching has transformed Araceli, and her and her *compañeras*' community-led forensic work has transformed Mexico. Their work of scouring the countryside with their *varillas* —iron bars used to pierce the ground to detect odors, textures, color changes, and different levels of compaction—, searching for bodies, has made disappearance actionable. Their searching and support of state forensic investigations has made finding and identifying Mexico's disappeared a reality. With each excavation, they have demonstrated the existence of thousands of clandestine burials and shown that they could and should be investigated. Without the *buscadora* collectives there would be no graves only *desaparecidos*.

In this paper, we draw on ethnographic research and interviews with *buscadoras* and forensic scientists working in contemporary Mexico to examine three cases of community-led forensics from different parts of Mexico. Attending to spaces that exist alongside but exceed contemporary forensic practice, we critically reexamine the imagination and practice of community-led forensics in the context of the humanitarian and forensic “crisis” in Mexico. We analyze the work of the *buscadoras* in three registers: the (inter)relational, the geo-logic, and the more than human, showing how *buscadora* collectives reimagine one of the central practices of forensic anthropology —excavation—, relating differently to history, space, and place, moving beyond an exclusively human-centered episteme, and centering emergent forms of relationality (Povinelli 2016; Yusoff 2018). We argue that these emergent practices offer a *deep forensics* that displaces the crisis time of contemporary state-led forensics to understand the entangled contexts of “stratigraphic violence” in contemporary Mexico.

Scholars and activists in Mexico have pointed to the crisis of violence and impunity in the country where several thousand clandestine graves have been identified nationwide in the last fifteen years. Forensic science has been posited as a crucial tool of justice and healing (García-Deister and Lopez-Beltrán 2017) and at the same time critiqued as reductive, inaccessible, and a bureaucratic tool of necro-sovereignty (García-Deister and Smith 2020) in a landscape of neoliberal dispossession (Robledo 2019). Groups of family members have seized the tools of forensic science, forming teams of lay *buscadoras*, finding sites of mass extermination, excavating them to try and find their missing loved ones (Cruz-Santiago 2017; Torres 2020). Here we foreground the emergent, partial, and experimental aspects of the *buscadoras* approach to forensic science, to show how their work offers new imaginaries of what forensics can be, what it might deal with, who and what it is for, and what worlds it might help to

create. Their praxis offers complex accounts of living alongside multiple, overlapping violences, and how histories and futures might be re-imagined and invoked to care for the present (Puig de la Bellacasa 2017; Tsing 2015).

Drawing on twenty-two months of ethnographic research and more than five years of collaborations with *buscadora* collectives in Mexico between 2015 and 2022, we present three ethnographic case studies of the work of these collectives in different geographical and political contexts in Mexico. Based on quotes from ethnographic interviews with *buscadoras* working in each site, we highlight their experience and expertise in reshaping forensic practice towards deep forensics based on new forms of interdependence and expertise (inter-relationality), time, environment, and violence (geo-logics), and emergent ontologies that rethink human-animal-environmental relationships (more-than-human). First, we focus on *buscadora* collectives working near Río de Los Remedios, which crosses the central area of the country. El Río de Los Remedios, once part of a massive modern hydraulic engineering project designed to drain the old lake system of the Valley of Mexico, has recently turned into a dumping ground for chemical, industrial and urban waste, including human bodies. In this latter sense, this river of dark waters has become a clandestine mass grave for women in the State of Mexico. Then, we move to an area of the desert of Coahuila, where a group of *buscadoras* scour the cracked earth, inch by inch, looking at the ground, sharpening their sense of smell, identifying changes in the color and texture of the soil that could indicate the presence of buried human remains. Along with the human remains, these practices trace the violent means by which contested minerals, fossils and objects are exhumed from their natural environments. Finally, we examine the work of *buscadoras* in the rainforest of Veracruz, where a cadaver dog signaling at a tree leads to the unearthing of a complex root system which has transported the chemicals released in the bodies' decomposition. By excavating this relational more-than-human complex of groundwater, root systems, and chemical signals, the *buscadora* collectives were able to identify a clandestine burial site.

Beyond Forensic Crisis: Institutional Reform, *Levantamientos Exprés*, and Collective Action

Crisis has become a watchword in Mexico. Leaders describe the multiple and intricate economic, humanitarian, ecological, and political challenges facing the nation in stark language. For example, in an interview about his annual report on Latin America, published at the beginning of 2019, executive director of Human Rights Watch, Kenneth Roth, states: "The world is living in dark times." And in this world, he continues, "[M]exico is a human rights catastrophe" (Guevara 2019). From "the grave humanitarian crisis" (Isacson, Beltrán, and Meyer 2019) to the recurring "water crises in Mexico" due to unrestrained extractivism, drought, and contamination (Brooks 2022), to the "crisis of migration and climate change" (Ramírez 2021), the social, ecological, and political challenges are discussed in catastrophic

terms. These narratives of crisis have come to inhabit everyday language in Mexico's public and political spaces. No event better exposes the interrelatedness of the crises, than the "forensic crisis" in Mexico, and, with it, the recognition of both a profound and ongoing humanitarian crisis and a crisis of innumerable, uncounted, and unidentified dead.

As of July 2022, the Mexican government officially recognizes 103,130 disappeared individuals between 1964 and 2022, making the official numbers match the estimates long put forward by search groups (Comisión Nacional de Búsqueda 2022). A public-facing database now allows visitors to find the data on disappearances by age, gender, and region in Mexico. The transparency of the new database created in 2017 and maintained by the Mexican Comisión Nacional de Búsqueda (CNB) is part of a series of measures meant to respond to the government's failure to address the problem of disappearance and death. The Mexican government only officially recognized 40,000 disappeared between 2006 and 2019 (Cordero 2019) as recently as 2019; there was no consensus on the number of victims. Data came from multiple official and unofficial sources on the crime of enforced and involuntary disappearance, but none of them made it possible for searching families or the Mexican public to know the precise number of missing persons in Mexico (Smith and García-Deister 2017).

Even with improvements to the system of registering and reporting on the number of disappeared people, there remains an entrenched problem surrounding the forensic processing of clandestine burial sites and the identification of bodies. Mexico has lacked an effective system for exhaustive and precise counting of the clandestine graves discovered, much less of the human remains found in them. In addition to the discrepancies in the official accounts, the lack of coordination and ineffectiveness of the institutions was also evident in other areas. In 2019, there were more than 37,000 unidentified bodies in the custody of forensic services, distributed among refrigerators, containers, *osteotecas*³, and mass graves, the latter spread out without any order or methodology in municipal cemeteries throughout the country (Cordero 2019). The procedures established for the recovery and analysis of the bodies found were not rigorously and systematically applied. Morgues had no more space for bodies, so that in the rare cases where autopsies were performed, it was often in nearby funeral homes.

In 2019, Mexico officially recognized this set of challenges as a "forensic crisis" before the InterAmerican Human Rights Commission and proposed to create the *Mecanismo Extraordinario de Identificación Forense*, an autonomous, multi-disciplinary mechanism responsible for the expert analysis of unidentified remains (SNBP/001/2019) to address these challenges. This new mechanism was designed to work alongside several other legislative and government initiatives to address the demands of searching families and the lack of coordination, capacity, and

3 A biobank is a space for the preservation and grouping of human bone material and anatomical models, intended for educational and research activities.

transparency in identification processes. In 2020, the *Protocolo Homologado para la búsqueda de personas desaparecidas y no localizadas* was passed, offering a centralized set of legal norms around searching for missing people (SNBP/002/2020), legalizing, and protecting many of the practices that collectives had been engaging in for years. Unearthing bodies and naming the dead has become a priority social, scientific, and political activity.

Although *buscadora* collectives depend on the CNB to begin excavating potential clandestine burial sites, the people we interviewed remain wary of government experts. They describe the work of these forensic experts as *levantamientos exprés*, a rapid gathering of remains without proper attention to forensic protocols. They see this express forensic work as focusing narrowly on getting excavations completed and remains useful for DNA analysis collected (key metrics measured and reported by the CNB).⁴ Searching family members argue that too many officials are unwilling to do the careful work of systematically collecting all the remains at the site. Graciela Pérez Rodríguez, a leader in the *buscadora* movement described the mismatch between these two forms of searching in these terms:

With every body or remains that we find, I imagine that it could be my daughter. And if that were the case, I would reconstruct her piece by piece. I wouldn't leave behind even the smallest piece of her. That's what I would want. I imagine that other families must feel the same. That is why we organize, at least those of us that are here, the collectives that do this work.⁵ (Pérez 2021)

At a recent excavation that one of us attended, there was a disagreement between the collectives and the officials about how thoroughly to examine the site for multiple burials and the appropriate items to bring back to the laboratory for analysis. The expert working with the *buscadora* collective argued that the group needed to excavate the grid carefully and collect as much of the remains as possible at a defined site; the state expert wanted to collect only the clearly recognizable remains on the surface and move quickly to other areas. The expert explained her position: "It's that this is a forensic excavation, not a case of ancient remains where you have all the time in the world. Here we don't have time. We must be practical"⁶ (interview with authors, June 2022). Expediency and necessity drove the state official's focus on rapid forensics. The family groups focused both on good scientific practice and care for the dead. In one interview, a mother discussing a different, but similar situated

4 To find out more about the CNB, see, "Contexto General - Dashboard CNB." Database. Registro Nacional de Personas Desaparecidas y No Localizadas (RNPdNO), January 8, 2022. <https://versionpublicarnpdno.segob.gob.mx/Dashboard/ContextoGeneral>

5 The original in Spanish reads: *Con cada cuerpo o resto que encontramos yo me imagino que podría ser mi hija. Y si ese fuera el caso, la reconstruiría pedacito a pedacito, no dejaría ni un pedacito de ella. Eso desearía. Yo me imagino que eso mismo sienten las demás familias. Y por eso es que luchamos, es por eso que estamos acá los colectivos que hacemos esto.*

6 The original in Spanish reads: *Es que esto es una excavación forense, no de restos antiguos en donde tienen todo el tiempo del mundo. Aquí no hay tiempo, hay que ser prácticos.*

debate with an official, described how she could, of course, understand the position of the officials. They were busy and had families, work, and lives to attend to. She understood the need to limit the activities on that site visit but still she couldn't help her sense of responsibility to the dead they had not found in that area. As they left, she felt compelled to address them:

I swear that I turned around as we were leaving the site and I started to cry... and I told them, don't, don't think that we are leaving and forgetting you. We will come back next year so that you can all reach your homes.⁷ (Salcedo, interview with authors, July 30, 2022)

The Mexican government has taken important steps towards realizing the most basic requests of search groups: an accurate accounting of the missing, public information about forensic activities and their outcomes, and centralized, unified laws governing the search process. However, these procedures, even when followed, expose the enormous gap between the lived realities on the ground of *buscadoras* and the state's "solution" to the forensic crisis. Here, we describe how disappearance in Mexico and the government response has been governed by crisis thinking (Roitman 2013; Rudnycky 2018), which has prompted narrow, short-sighted technical, individualistic, human-centered understanding of truth and justice (García-Deister and Smith 2016; Smith 2017; Wagner 2008) while displacing the deep temporalities and inter-relationalities in which the humanitarian and forensic crisis unfolded in a context of neoliberal dispossession and grave ecological and environmental conditions. By rethinking the excavation through the lens of deep forensics, we show how emergent practices open a space to attend to overlapping systems of violence and emergent relationalities as a counter to the *levantamientos exprés* of state-led forensics.

The River: Weaving (Inter)Relational Forensics

My name is Maria Eugenia Fuentes, I am the mother of a victim of femicide, of Diana Angélica Castañeda, 14 years old... [gets emotional] ...sorry for so much emotion... I'll calm down now... She disappeared on September 7, 2013, in Ecatepec in the State of Mexico and [...] a year later in the month of September the State Attorney's Office tells me that they found a skull [silence] and some feet [silence]... She had been kidnapped, held for five months [...] Apart from what she suffered [there], they killed her, dismembered her, and threw her into a canal... After a year the Attorney General's Office calls me. They found a torso... I am putting together

7 The original in Spanish reads: *Tè juro que yo volteé mientras nos íbamos del sitio y se me salían las lágrimas... y les dije, no, no crean que nos vamos y los olvidamos. Regresaremos el año que viene para que ustedes puedan llegar a sus hogares.*

my puzzle. I am still missing her legs, her arms, her hands.⁸ (Encuentro Red de Madres, Espacio Cultural Punto Gozadera, November 24, 2016)

We first heard the testimony of Maria Eugenia, a member of the *Red de Madres Buscando a sus Hijas* collective, at a 2016 meeting on the problem of femicide in the State of Mexico. She told her story as part of a broader conversation in the feminist militant center, Punto Gozadera, in Mexico City, which brought together several women from the Red de Madres *buscadora* collective, mostly linked to cases of femicide in the State of Mexico, with independent scientists, academics, feminist activists and artists such as the Chilean composer Ana Tijoux. The meeting was organized by the Mexican Forensic Anthropology Team (EMAF), which have supported and collaborated *Red de Madres* in their search for justice since 2015.

Maria Eugenia described the identification of her daughter Diana Angélica as a macabre forensic process of recovering her body like the many pieces of a puzzle. “What they [EMAF scientists] have taught us on this path,” Maria Eugenia continued, “is how to tackle this search process with wisdom and patience, especially with regard to the authorities” (Encuentro Red de Madres, Espacio Cultural Punto Gozadera, November 24, 2016). Dealing with the authorities, their cruelty, their disrespect, the ways in which they didn’t value the lives of the young women they were tasked with finding, their total disregard for the social and economic realities that many families experienced, was described as a form of relentless violence. From being forced to go to the authorities on several occasions to report their case to the aspersions cast on their daughters’ behavior and actions, the women described the apparent impossibility of reporting and then finding a missing young woman in the State of Mexico. Searching was like putting together a puzzle, the EMAF suggested offering this metaphor as a way to make sense of both the social and forensic aspects of searching. For EMAF, and now also for this group of mothers, the so-called “search process” not only involved the location and recovery of bones and their identification by DNA in a laboratory, but a meticulous, patient, and fragile interweaving work that involved both material and discursive aspects and intricate relations between science, technology, activism, and the State. In Maria Eugenia’s experience the puzzle metaphor was all too literal. Despite being one of the “successful” cases where her daughter’s body had been found and identified, the slow, partial, and unfeeling process to which the Mexican state had subjected her, highlighted for the group the humanitarian and forensic failures of the state.

The remains of Diana Angélica Castañeda Fuentes, 14, were found in February 2014 in the municipality of Ecatepec de Morelos, in the State of Mexico. She was found

8 The original in Spanish reads: *Mi nombre es Maria Eugenia Fuentes, soy mamá de una víctima de feminicidio, de Diana Angélica Castañeda, de 14 años... [se emociona]...perdón con tanta emoción... ahora ya me relajo... Ella desaparece el 7 de septiembre de 2013 en Ecatepec en el Estado de México [...] y hasta un año después en el mes de septiembre me avisan por parte de la Procuraduría del Estado que encontraron un cráneo [silencio] y unos pies [silencio]...La tuvieron secuestrada cinco meses [...] Aparte de lo que vivió la mataron, la descuartizaron y la echaron a un canal... Después de un año la Procuraduría me avisa otra vez que encontró un torso... Voy recopilando mi rompecabezas, me faltan sus piernas, sus brazos, sus manos.*

between streets C-1 and C-10 of an industrial estate delimited by the so-called “curve of the devil” on Carlos Hank González Avenue and Texcoco Street. Attached to these streets runs a river that is known as De la Compañía or De los Remedios, whose banks house urban developments with more than 200 homes as well as large factories and warehouses, which until a few years ago served to strip stolen cars, and are now an area of great industrial activity. Diana Angélica’s remains were found while dredging this small section of Rio de los Remedios, along with 20 other bodies, 16 of them women, and an indeterminate amount of biological remains in different states of decomposition scrambled with debris, waste, and industrial objects and remains of all kinds. Authorities were never able to determine whether they were human or other animal fragments and, after several days of media coverage, nothing more was reported: officials did not collect any other evidence, there was no confirmation in relation to the analysis of the findings, nor is it known where the remains ended up.

At some point in the process of identifying and recovering her daughter’s remains, Maria Eugenia managed to access the report on the excavation in the canal. Attached were images of the site and a list with a brief description of the evidence recovered in the river. These showed a “large mountain of garbage” from which they extracted her daughter’s remains. Experts from the Attorney General’s Office of the State of Mexico excavated various sections of the Remedios River and the Grand Canal. Within a mountain of several meters of mud mixed with garbage and human remains, extracted from the river bottom by a backhoe they discovered: “a raffia sack inside which there were two meticulously closed black garbage bags, tied with a very long black shoelace in a fisherman’s knot.” (Carrión 2018, 167). That was the 27th find of that day. During the excavation, carried out over several days along 19 kilometers of the Grand Canal, the backhoe raised seven thousand biological remains of “indeterminate” origin from the river, of which they managed to identify remains from, at least, twenty different people.

In the collective, there were several cases of mothers who had recovered the body of their daughters in the Rio de los Remedios, most of them victims of femicide, and all of them, without exception, cases marked by bad police and forensic practices. The excavation and survey of the findings was hurried and careless; the exact location of each piece of evidence was not recorded and/or there is no chain of custody; the body was often recovered incomplete and sometimes injured by the backhoe exhumation technique; the forensic context of recovery had been systematically destroyed, and the remains scrambled with those of other bodies. Clothing and personal belongings were rarely recovered.

Scholars of femicide in Mexico have described scenes like this as part of broader technologies of disappearance. Robledo Silvestre and Hernández Castillo warn, already in the 1990s, of a “disappearing device” being applied to the bodies of poor and racialized women, in what is known as the crisis of femicides in Ciudad Juárez. These bodies were no longer of political dissidents deemed a threat to national security but instead understood as disposable within a sexist, racist, and

classist system (Hernández 2019). Feminist thinkers and theorists have pointed out the importance of analyzing what Segato calls “pedagogy of cruelty” in feminicides (Mendoza 2006; Segato 2013). This is, according to Segato, an “expressive rather than instrumental violence” that promotes and normalizes the “spectacle of the plundering of life until waste, until leaving only remains” (Segato 2013, 83). Rather than an extraordinary or scientific failure, these scholars point to the violence and carelessness of excavations like that of the Rio de los Remedios as a purposive spectacle of patriarchal power.

Explaining the role of forensic expertise as part of the work of combatting feminicide, an archeologist from the EMAF advocated weaving as an antidote to the disappearing devices of the official forensic response to feminicide: “It is never about only one approach or an isolated technology” (EMAF interview with the authors, February 2020). Instead, good forensic praxis, they explained was a work of weaving both as practice and process. It requires situated analysis based on systematic techniques and forensic expertise, but also the expertise of the *buscadora* collectives and the individual experiences of its members. The rehearsing of the personal and collective histories of this group was an integral part of the *buscadora* collectives’ forensic practice of both recovering and *remembering* unimaginably wounded bodies like those of Diana Angelica. This inter-relational forensic praxis was grounded in individual, cultural, and historical experiences, forming, meticulously and patiently, a very fragile fabric of materiality and stories. Although slow and partial, this process elaborated by the EMAF and the *buscadora* collectives fostered richer and more unique connections between science, technology, and remains. It also offered pathways to (re)connect places and people with their stories and their continuous struggles.

Nigerian visual artist, Otobong Nkanga invented a term to talk about people working on, with and from fragility, calling them *Fragilologists*, and places them in the contemporary Nigerian context in relation to the processes of social and environmental devastation linked to colonial extraction and exploitation in her homeland (Nkanga 2010). Nkanga does this work materially weaving delicate fabrics out of objects from deeply wounded contexts. The *buscadoras* could also be understood as *fragilologists* weaving with their words, their clues from searching, the partial, violated remains they recover into emergent relationalities. This fragility of things, objects, bodies and their deeply violated environments indicates that everything can disappear, disarticulate, break or be irreversibly contaminated and at any time, but it also reminds us that there is always a thread, a trace—even to the slightest remnant or memory—that invokes us to resume the urgent and complicated task of connecting, interweaving and bonding fragilely with other(s); to learn to read in unexpected and risky associations the fragile, delicate, and fleeting writing of wounded matter.

9 The original in Spanish reads: *Nunca se trata de una sola técnica o de una tecnología aislada.*

At the EMAF meeting in Mexico City, the Rio de los Remedios remained in the background. It was the site of the failure of the Mexican forensic response, a complicating factor. Here it was the turbulent, dark, and dirty waters of a contaminated city river. In another case in Tamaulipas, which collectives discussed with us, the problem was that the bodies were deposited in an abandoned well filled with water. In another case in Veracruz, the jungle was too thick and the canopy too dense for an effective excavation. In yet another, the conditions of the desert paired with the practices of delinquent groups left the remains too scattered and degraded to collect and process. Place mattered to the government experts but only as a background to the real, practical work of collecting the remains. The diversity of environments, their contamination, the extremes of weather, and geographic features mattered primarily as an excuse for incomplete forensic work. However, for the *buscadora* collectives, these clandestine burial sites, their histories, their geographies, and the evidence they offered of layered violence mattered. That day at the meeting, the river remained firmly in the background. In the remainder of this paper, we describe how the absent presence of the river that day in 2016, presaged the increasing importance of geographic, environmental, and more-than-human relationalities in the work of collectives. The specificity of a space and place that had once been the mere background of the central scene —the scientifically purified forensic excavation— emerged as a protagonist.

The Land: Geo-logics and Stratigraphic Violence

The search begins when you reach the point, this is usually a large area of the Coahuila Desert that some *ejidatario* [rancher] or *chivero* [goatherd] mentioned in passing. ...When you get out of the vans, the first thing you think is *where the hell do you start?* The sun is at its peak; the earth, is loose and unending... You walk, a lot, carrying the *varilla* [T rod] and a bottle of water, looking over every inch of the cracked earth, trying to determine whether underneath there are the remains of what was once a man, a woman, a son... any remains. At times, you stop, you look up, you observe the majesty of the scenery, you breathe, you try to imagine where those bodies were before they ended up here. You feel the pain, the hopelessness, the tiredness, then the hope. You continue walking.¹⁰ (Ortiz 2019)

10 The original in Spanish reads: *La búsqueda inicia cuando se llega al punto, éste suele ser una zona extensa del Desierto de Coahuila que algún ejidatario o chivero mencionó de pasada... Al bajarte de las camionetas, lo primero que piensas es ¿por dónde chingados se empieza? El sol está en su máximo resplandor; la tierra, suave e inagotable; ...Se camina, mucho, cargando la varilla y la botella de agua, mirando cada centímetro del suelo agrietado, observando si aquí tiraron lo que alguna vez fue un hombre, una mujer, un hijo... un resto. En momentos, te detienes, levantas la mirada, observas la majestuosidad del escenario, respiras, tratas de imaginar dónde estuvieron esos cuerpos antes de acabar aquí. Sientes el dolor, la desesperanza, el cansancio, la esperanza. Continúas caminando.*

In 2019, a member of the Grupo Vida *buscadoras* collective, Silvia Ortiz, searching for her daughter, Fanny Sánchez Viesca Ortiz, in the Mexican State of Coahuila, narrated an eloquent and evocative account of searching in the desert at a presentation of the EMAF's project Forensic Pedagogies. In her telling of the embodied experience of walking the desert, she drew our attention to the heat, the sunlight, the sand slipping under her feet. She explains that even in these conditions, the majesty of the landscape often acts as an anchor, grounding her and the other members of the collective to the place and to the history of the bones they are searching for, histories of land and lives that exceed the meticulous, exhausting forensic processes they were engaged in. Her narration went on for 10 minutes and brought us into the intimacies of their search: the ways they have learned to use their eyes and noses to find anomalies; the reality that the remains they find in the desert are almost always burned and on the surface, "*esparcidos en un desierto habitable solo para las gobernadoras y las aves de rapiña* / scattered in a desert habitable only by Chapparal [plants] and birds of prey" (Ortiz 2019).

The relationship that collectives formed with the land by walking slowly, deliberately, repeatedly scouring meter-by-meter for signs of clandestine burial came up often in our interviews. The *buscadoras* emphasized the expertise that comes from being in a place, of taking time, of knowing the signs that matter in a specific environment. Graciela Pérez, the leader of a Tamaulipas-based *buscadoras* collective, Milynali Red, like Araceli and Silvia, is one of the founders of *buscadoras*. She has been searching for her daughter Milynali Peña Pérez, since 2012. Milynali was 13 when she disappeared along with her uncle and three teenage cousins as they were crossing Tamaulipas returning to San Luis Potosí from a short trip to the United States.

Graciela, organizes one of the largest networks of *buscadora* collectives, holding annual meetings to share their experiences, support one another, and hold the Mexican State accountable to their promises to improve their search and identification processes. In 2020, mirroring the work of the *Protocolo homologado de búsqueda* that the Mexican State established as law, Milynali Red published its own set of protocols, *Protocolo estandarizado de búsqueda ciudadana en sitios de exterminio*,¹¹ codifying its experiences and expertise (Pérez, Lopéz, and Pérez 2020). Graciela had learned to ignore those who dismissed their work as naïve or lacking expertise explaining:

[W]e've been learning as we go along, with the finds that we have, we've learned how things are ... When you are there and you see a tree or some unique characteristics, that is what draws your attention telling you that there was something here or allows you to dismiss it saying, no this is trash or it is recent, this has

11 *Standardized Protocol for Citizen Searches at Extermination Sites.*

only been here for a little [while].¹² (Graciela Pérez Rodríguez, interview with the authors October 14, 2021, Mexico)

Like Silvia, Graciela, emphasized both the embodied expertise of the searcher and how that articulated with the place in which they search. At a recent virtual meeting of representatives from *buscadora* collectives located around Mexico that we attended, ecology and its local history came up repeatedly. First, the group talked about the lack of rain in the North and how this was affecting both the searches and community life in general. One participant spoke about the desperate situation in her state, Nuevo León, where access to drinking water was being affected. More participants joined in discussing the weather, water, risk, and shifts in climate and vegetation. The environment turned into a main topic at the meeting, which had been planned to focus on technological needs, as another participant quickly side-tracked the conversation saying that before technology needs were assessed we had to consider context. She explained that by context she meant both the socio-political context of disappearance and searching and the flora and the fauna, the landscape, and the environmental realities that they experienced on their searches. It wasn't the same to search in Veracruz with its wet conditions and use of clandestine burials as it was to search in the desert where it was dry, and bodies had been burned and scattered. She added that animals and plants played a huge part in their work and that they were context specific. They could not talk about new technologies until they understood context: social, political, and environmental.

A 2020 special issue of the Journal of Latin American Cultural studies edited by Gabriel Gatti and David Casado-Neira introduces the concept of *ecologies of disappearance* arguing that contemporary disappearances as opposed to the disappearances that characterized cold-war Latin America have a unique spatiality (Gatti and Casado-Neira 2020). As opposed to dedicated spaces of disappearance like the clandestine detention centers of Argentina's dirty war (Armony, Menjivar, and Rodriguez 2005), disappearances are increasingly intertwined with natural spaces. The essays included highlight the central role of ecologies, in both a theoretical sense and literal sense, as under "democracy" people disappear when they and their communities' needs come into conflict with extractivism (Andermann 2020), when bodies are dumped in rivers to hide the crime of disappearance (Guglielmucci 2020), and when the criminalization of migration has weaponized jungles and deserts as spaces of death (Gatti, Irazuzta, and Martínez 2020). In these new ecologies of disappearance, nature and repression are intertwined in new "pedagogies of cruelty" (Segato [2006] 2013) but also offer the potential of new forms of sanctuary and shelter.

The *buscadora* collectives' call for a greater analysis and recognition of the unique political, social, and environmental realities that each group faced, aligns with the

12 The original in Spanish reads: [H]emos ido aprendiendo en el camino, con los hallazgos que tenemos, hemos ido aprendiendo a saber cómo es... Cuando estás caminando y ves un árbol o ves alguna característica diferente eso es lo que te hace que te llame la atención como para decir aquí hubo algo, o descartarlo sencillamente diciendo, no, esto es basura, o esto es nuevo, esto es de hace poquito.

ecological thinking Gatti and Casado-Neira advocate. Here an attention to the materiality, history, and political economy of the spaces where people disappear, where the collectives search, and where remains are found becomes the foundation for searching and finding. Unlike the Rio de los Remedios, relegated to the background of Maria Eugenia's search, the desert, the mountains, and the jungle were front and center. It was the embodied knowledge of fieldwork in Tamaulipas over ten years which allows Graciela to see and recognize sites of extermination. It was the majesty of the desert that sustained Silvia as she scoured its surface to find burned remains.

Through their embodied knowledge of searching within specific spatial ecologies, the *buscadora* collectives were engaging in what we argue is a new kind of deep forensics, one that re-articulates the relationship between place, ecologies of disappearance, and broader movements for justice. With their discussion regarding the lack of water, the participants at the meeting discussed local environmental concerns and the ways in which the violence they document in citizen searches overlaps with other systemic forms of precarity. In many of the meetings we have attended, community members mention a presentation by a geo-spatial geographer with maps showing the overlap of extractivism (mining and oil extraction) and the rate of disappearances, arguing for a relationship between these two forms of violence. This too is part of the context the *buscadora* collectives felt was essential to guide their future forms of searching. We suggest that this type of organizing represents an attention to new types of stratigraphic violence, that is, slow violence (Davies 2022; Nixon 2011) which becomes sedimented in the earth and is often made visible through the types of expertise and inter-relationality they practice. Although their work remains firmly centered on finding the disappeared, it has also brought to light historical and ecological violences.

The Roots: Entanglements in a More-than-Human Forensics

It's amazing how the land and trees are giving us, the families of disappeared people, a little bit of peace. Nature is a witness to suffering. Despite having felt the pain of all these people who were buried clandestinely in their forests, the trees, through their roots, are pointing us to ways to find them. Life puts us in very difficult situations, but it somehow wove bonds so that together we can give truth about what happened in [...] this extermination site.¹³ (Araceli Salcedo, *Roots of Pain*, documentary 2019)

13 The original in Spanish reads: *Es increíble cómo la tierra y los árboles nos están devolviendo a las familias de personas desaparecidas un poco de paz. La naturaleza es testiga del sufrimiento. A pesar de haber sentido el dolor de todas estas personas que fueron inhumadas clandestinamente en sus bosques, los árboles, a través de sus raíces, nos están señalando caminos para encontrarlos. La vida nos pone en situaciones muy difíciles, pero de alguna manera tejó lazos para que juntas podemos dar verdad sobre lo que pasó en [...] este campo de exterminio.*

At the beginning of 2019, Veracruz activist Araceli Salcedo, whose story opened this paper, and her colleagues from the Collective of Relatives of the Disappeared of the Córdoba-Orizaba area anonymously received a map and two photographs with information about an area of clandestine burials located in the municipality of Río Blanco, in the central mountainous region of Veracruz. In a wooded and steep terrain located in the Cerro de Los Arenales, more than 350 meters up the mountain, the women of the collective began their search without much of an idea of what they would find there.

Loaded with shovels, water canisters and *varillas*, the women quickly identified signs they recognized as markers of a potential clandestine burial in this region of Veracruz. Disturbed earth, piled stones, an intense and characteristic smell, and many flies. They returned the next day accompanied by experts from the Mexican State and a cadaver dog. These trained dog-human teams are known in Mexico as “canine binomials” in police and forensic slang because of their symbiotic alliance with their trainer and their sympathy with the pain of humans. Araceli and her collective call them *angelitos*, little angels aiding them in their search. These symbiotic animals, whose physical characteristics allow them to transit through small, overgrown spaces to which their human companion does not have access, are specially trained to search and are able to detect specific odors associated with dead bodies with precision. Araceli recounted the strangeness of this particular search when within a few meters of the start of the search with the canine binomial, it stopped and began to bark, not towards a potential grave site on the ground, but up towards the trees: “We did not understand how or why the dog gave us so many false positives in this tree, a large tree. Because they couldn’t have removed the tree, dug a grave and then replanted it. That’s impossible.”¹⁴ (Salcedo, interview with authors, July 30, 2022).

The *buscadoras* discussed the case with the anthropologists and forensic scientists from the Mexican federal police. The only theory that seemed plausible was that the roots of this tree were extracting water from the grave sites, taking it up, and then emitting the chemicals the dog associated with cadavers. That might explain the dog’s behavior and how such a large tree could relate to a grave site. They then decided to follow the roots until they found two sites side by side. The clandestine burial sites were rocky and close to a river. The dog passed right over them, signaling nothing, but the tree roots led the search teams to the exact spot. Since that excavation, Araceli has become a vocal proponent for the important role of nature and its wisdom in the work of the *buscadora* collectives. She speaks of the trees, the cadaver dogs, even the butterflies that, in semi-mystical terms, accompany them in their search,

14 The original in Spanish reads: *No entendíamos cómo o por qué, el perrito nos marcaba muchos falsos positivos en un árbol, un árbol grande, y pues decíamos este árbol no lo quitaron, hicieron la fosa y lo volvieron a sembrar, es imposible.*

We call them roots of pain because they led us to our dead... And because the specific characteristics of the find reflect the pain of all those people who are buried in that place and of which the trees have been silent witnesses. [...] It is incredible to see how nature, with the passage of time, mixes with what is on earth, in this case the bodies. The mountain, the land and its forests through the roots showed us the way... That's why we say nature returned us to our own.¹⁵ (Salcedo, interview with authors, July 30, 2022)

In searches like those in Veracruz, *buscadoras* are part of a rich and strange universe of enormous trees fed by pain, sympathetic binomials, butterflies, and mortal bugs, as a painful and contradictory space of flourishing (Haraway 2016). They discuss their complex relationships with “weeds” like the creosote covering the desert, or with the fungi, bacteria and microorganisms that nest in the foliage and the soil and decomposed remains; they discuss the wisdom and signals of insects, scavenger birds, wild packs of dogs and other “cadaveric” species that guide and connect them with the land, each other, and their missing in multiple and reciprocal ways. In these ecologies of disappearance, multi-species relationships abound, survive, and emerge in times and places of massive extinctions, pauperizations, and exterminations. These wild/monstrous multi-species searches are their witness, the strange relatives of disappeared, displaced, extinct and annihilated creatures that populate this dense history of transformations and dispossessions. In Haraway’s words, these relationalities “twist, delight and grow profusely in manifold forms and manifold names in all the airs, waters, and places of earth. They make and unmake; they are made and unmade” (2016, 2), while they challenge and demand responsibility from us.

Conclusion: Towards a More-than-Human Justice

The Coahuila desert, Veracruz’ roots of pain, the urban Mexico’s Rio de los Remedios, these ecologies of *búsqueda*, of searching, with their natural and artificial landscapes, constructed by extraction, violence, and the careful intervention of the *buscadora* collectives make up a sedimented history of transformations, dispossessions, and struggles. These nature/cultures, their waste as well as their technologies and infrastructures, hold ways of living and dying that return and insist on our present.

By excavating the human-nonhuman, living-nonliving relational complex of these ecosystems, the *buscadoras* open a horizon to a new kind of deep forensics that acknowledges the multiple temporalities, scales, and processes of deep, stratified forms of violence, which operates by way of entangled forms of life-destruction

15 The original in Spanish reads: *Las llamamos raíces del dolor porque nos guiaron hacia nuestros muertos... Y porque las características particulares del hallazgo reflejan el dolor de todas aquellas personas que se encuentran enterradas en ese lugar y del que los árboles han sido testigos mudos. [...] Es increíble ver cómo la naturaleza, con el paso del tiempo, se mezcla con lo que haya en la tierra, en este caso los cuerpos. La montaña, la tierra y sus bosques a través de las raíces nos enseñaron el camino... Es por eso que decimos que la naturaleza nos regresó a los nuestros.*

—for humans and nonhumans alike— and finds its expression not solely in the so-called Mexican drug war, but also in slower violence of resource extraction, historical and current colonialism and state domination in a landscape of neoliberal dispossession (Meszaros 2018).

These ways of making time and space for soil and bones, as Puig de la Bellacasa says, could help “to reveal a diversity of more-than-human interdependent temporalities, disrupting the anthropocentric appeal of predominant timescales of technoscientific futurity,” solutionism, and their reductive notion of responsibility (Puig de la Bellacasa 2015). This taking care of environments, soils, and situated human-nonhuman relations by the *buscadora* collectives, highlights the importance of “practices and experiences made invisible or marginalized by dominant, solutionist, short-term forms of technoscientific mobilization” (Puig de la Bellacasa 2015, 692) that tends to permeate forensic science and crisis thinking in Mexico.

Attending to practices and relations that exist alongside but exceed contemporary forensic domains, we argue that this deep, geo-logical, more-than-human forensics led by local communities of *buscadoras*, emerges from self-organized practices as well as new sets of aesthetic and narrative sensibilities. *Deep forensics* could contribute to displacing the short-term time scale of the current Mexican forensic crisis and the exclusive human-centered episteme of forensic practice, to bring about new understandings of the intertwined contexts of ‘stratigraphic violence’ as is inscribed in the earthly records of contemporary Mexico. But it remains emergent, rather than dominant.

The more-than-human alliances described by Aracelli and the politico-economic-environmental concerns raised by *buscadoras* searching in landscapes marred by extraction and drought are all-too-often dismissed as fanciful by experts. Some of the forensic experts we interviewed, saw this animism or magical sensibilities as signs as of the *buscadoras* lack of scientific expertise. Forensics and its attendant justice in their terms came from state-based forensics focused on efficiency and accountability. Justice, for the *buscadoras* remained a complex, multilayered concept: “What do we want? Justice!” The chant is the background of their marches demanding shifts in Mexican state forensic practice. But, as scholars working on the issue have shown, prosecution of perpetrators of disappearance is all but absent and the searching techniques of the collectives tacitly promise anonymity for tips about where bodies can be found (Aranda 2022; Martínez and Martínez 2022; Villarreal 2016). In our interviews and fieldwork, justice was articulated in affective terms, of returning the disappeared to their families or political terms, of holding the state and its officials responsible for fulfilling their duties. In this analysis, we offer another register for contemplating forms of justice, one which exceeds the narrow temporal dimensions of a crime and its prosecution, that is a more-than-human justice. In scholarship on the Anthropocene, climate justice, and decolonial social movements, scholars have pointed to the entanglements between colonial violence and its legacies, environmental justice, structural

violence, and multi-species relationalities arguing for the potential of new forms of solidarity and justice emerging from more temporally and relationally expansive frameworks (Fieuw, Foth, and Caldwell 2022; Tschakert 2022). Although a more-than-human justice does not resolve or address the very real and violent lack of accountability in Mexico, it can and does also exist alongside juridical conceptualizations of justice. The *buscadora* collectives' experiments in deep forensics may offer new methods for articulating forms of justice that include these longer histories and multi-species communities.

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