

Patterns

Femicide and counterdata production: Activist efforts to monitor and challenge gender-related violence

Graphical abstract



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In brief

This paper draws on data feminism to describe grassroots data activism practices around femicide and gender-related killing through a qualitative interview study of ten projects across six countries. We find that activists enact alternative epistemological approaches to data science that center care, memory, and justice. This work contributes to critical data studies, data activism, and human-computer interaction (HCI).

Highlights

- Describes grassroots data activism practices around gender-related violence
- Qualitative methods: interviews with 10 projects across six countries
- Activists enact alternative epistemological approaches to data science
- Contributions to critical data studies and human-computer interaction



Article

Femicide and counterdata production: Activist efforts to monitor and challenge gender-related violence

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THE BIGGER PICTURE Gender-related violence against women and its lethal outcome, femicide, are serious problems throughout the world. Although governments have passed legislation, official government data on gender violence and femicide are often absent and incomplete. We draw on data feminism to situate femicide data as missing data. Building on qualitative interviews, this study discusses the informatic work of ten activist and civil society organizations across six countries who combat missing data by producing counterdata. Activists enact alternative epistemological approaches to data science that center care, memory, and justice. Activists also face significant information retrieval and extraction challenges that increase monitoring labor and emotional burden. This work contributes to literature on data activism and critical data studies. The empirical insights contribute to HCI research, suggesting ways that the field may support and sustain the counterdata production practices of activists.



Production: Data science output is validated, understood, and regularly used for multiple domains/platforms

SUMMARY

Gender-related violence against women and its lethal outcome, femicide, are a serious problem throughout the world. Official government data on gender violence and femicide are often absent, incomplete, infrequently updated, and contested. We draw on data feminism to situate femicide data as missing data. Building on qualitative interviews, this study discusses the informatic work of ten activist and civil society organizations across six countries who combat missing data by producing counterdata. Activists enact alternative epistemological approaches to data science that center care, memory, and justice. Activists also face significant information challenges that increase monitoring labor and add emotional burden to reading about violent deaths. This work contributes to literature on data activism and critical data studies, proposing femicide data practices as an important research subject. The empirical insights contribute to human-computer interaction (HCI) research, suggesting ways that the field may support and sustain the counterdata production practices of activists.

INTRODUCTION

Femicide (or femicide) is the misogynous and gender-related killing of women. It is a serious problem globally. According to

estimates by the United Nations, 87,000 women were intentionally killed across the world in 2017—with nearly 60% murdered by intimate partners or family members.¹ In the United States, reports estimate that around three women are killed every day by



their current or former partners.² In Latin America and the Caribbean (LAC), every two hours, a woman is killed in incidents related to her gender.³ Beyond the loss of lives, these murders have deep and intergenerational ripple effects on the mental health and livelihoods of relatives and communities.

As striking as existing statistics are, they belie the complexity of the phenomenon and the challenges of monitoring it. Official government data on gender violence and femicide are often incomplete, difficult to access, infrequently updated, contested, and underreported due to stigma, victim blaming, or matters of legal interpretation.^{4–8} But where official records fall short, activists and civil society organizations have often stepped into these data gaps. In the past 2 decades, various grassroots data initiatives have emerged with the aim of shedding light on the problem of gender-related killings across the world and memorializing the lives of murdered women and girls. As Alice Driver⁹ notes in the case of Mexico, “the most accurate records of femicide are still kept by individuals, researchers, and journalists, rather than by the police or a state or federal institution” (see p. 7 of Driver⁹). These grassroots efforts are part of an activist genealogy that can be traced to the production of data about the femicides in Ciudad Juárez, Mexico and other Latin American countries in the 1990s,^{10–13} as well as work in North America to name and describe the growing epidemic of MMIWG2.^{14,15} Feminist activists working on the issue have moved from manually recording cases of femicide in the 1980s and 90s to producing data in digital formats with the aim of making the phenomenon visible.

This article examines the data practices of grassroots efforts to produce femicide data. Drawing on a qualitative study consisting of in-depth interviews with 10 activist and civil society organizations across six countries, this article’s contributions are 3-fold: (1) to delineate the data-gathering practices and technological challenges activists confront in their monitoring work, as well as how they navigate relational and ethical tensions that emerge from it; (2) to situate the intellectual and emotional labor that underpins data activism about femicide; and (3) to provide empirical insights that lay the groundwork for how interactive technology design may support data activism. Our research highlights how activists produce femicide data, as well as how they critically reflect on issues of data and power, how they combine and adapt technologies to their specific needs, and how they are constantly creating new knowledge both about femicide and about data. This study aims to help scholars in critical data studies, data activism, and human-computer interaction (HCI) to understand the relevance of femicide counterdata practices as a site of research and as an urgent and necessary model for how data science may be employed towards justice rather than towards data extractivism, surveillance capitalism, and the New Jim Code.^{16–18}

We position this study in conversation with literature on data activism and feminist HCI and draw on data feminism as an analytical framework for “thinking about data, both their uses and limits, [in a way] that is informed by direct experience, by a commitment to action, and by intersectional feminist thought” (see p. 80 of D’Ignazio and Klein¹⁹). The study is not offered as an evaluation or a critique of data-activist practices (deploying the “god trick” from academia to gaze on activist practice) but is rather offered from a position of “within,” where the co-authors are, variously, femicide data activists themselves or con-

ducting research and action in relation with the femicide data community.²⁰ This work is part of a larger South-North, feminist participatory action research collaboration called Data Against Femicide led by three of the co-authors, who are situated in academia, civil society, and activism. Data Against Femicide aims to foster an international community of practice that thinks critically about femicide data, to develop digital tools to support and sustain the work of activists, and to contribute to efforts to standardize the production of femicide data where appropriate.

In line with data feminism’s commitment to challenging expert power hierarchies in knowledge production and to embracing pluralism, our research aims to center the practices, ideas, and reflections of diverse activists and organizations. This qualitative study heeds Fotopoulou’s call for more work on citizen data practices—how citizens acquire, analyze, and use data—as opposed to solely studying the data practices of platforms or institutions.²¹ As a grounded case study, this work contributes to the growing body of literature on data activism and critical data studies, proposing femicide data practices as an important research subject.^{22–26} In addition, the empirical insights contribute to research in HCI concerned with the use of data science and digital technologies in support of feminist and justice-oriented goals, suggesting ways the field may support and sustain the counterdata production practices of data activists.^{27,28}

Background

Data feminism: Missing data and data activism

The theoretical grounding for our research draws from data feminism. In the book of the same name, D’Ignazio and Klein¹⁹ offer a set of principles for integrating an intersectional feminist lens into data science. We draw in particular on the principles examine power, challenge power, rethink binaries and hierarchies, embrace pluralism, and make labor visible, which are especially relevant for characterizing the situated sociotechnical contexts that shape femicide data production. To examine and challenge power is to reflect on how systemic inequalities and power asymmetries shape not only our world but the data produced about it, to rethink binaries and hierarchies is to problematize narrow understandings of multifaceted and intersectional experiences of oppression, to embrace pluralism is to elevate situated and experiential ways of knowing and doing data science, and to make labor visible is to recognize the intellectual, emotional, and physical human labor that produces data.

Beyond these principles, we also draw on two concepts discussed by D’Ignazio and Klein:¹⁹ missing data and counterdata. Missing data are data that are neglected to be prioritized, collected, and maintained, despite their relevance to the well being of significant groups of people. To explain how missing data about femicide are produced, D’Ignazio and Klein¹⁹ build on Patricia Hill Collins’s²⁹ “matrix of domination,” a Black feminist conceptual model that outlines a taxonomy of domains of oppression: structural, disciplinary, hegemonic, and interpersonal. This model serves to examine power across the multiple sites and scales that produce missing data and the various absences, inadequacies, and gaps in official information about femicide.

Related to the role of the state, many countries lack legislation about femicide, so no information is collected. Even when they

do include femicide in their legislation, many countries have failed to create supportive climates for survivors and families to report violence or have failed to implement adequate information collection and publication.³⁰ Perhaps most pernicious is the lack of data that results from what Menjivar and Walsh³¹ have called “state acts of omission and commission,” wherein the state either indirectly or directly allows violence to go unpunished, contributing to underreporting and resulting in missing data. These kinds of state acts relate to the structural and disciplinary domains of oppression in Collins’s framework, where oppressive laws or inadequate legislation are enacted and implemented, respectively.

A third domain that contributes to missing data is the purview of media and culture: the hegemonic domain is where stereotypes and harmful cultural ideas circulate. As we will discuss further in our analysis, media coverage of femicide is often wholly absent or, when there is coverage, the media tend to reproduce gender stereotypes and blame and misgender victims, reinforcing stigma, normalizing gender-related violence, and further reducing political will for measuring the problem (see, for example, England³² and Vanoli Imperiale³³). Finally, the interpersonal domain is where individuals experience oppression directly as discrimination and violence. In relation to data about femicide, the violence extends beyond the act itself, leaving families devastated, demoralized, and reluctant to report violence, perpetuating the cycle of missing data (see pp. 35–39 in D’Ignazio and Klein¹⁹). The matrix of domination thus provides a high-level framework for understanding how oppression at multiple scales produces missing data.

As a way to confront missing data and challenge power, the second principle of data feminism, femicide data activists engage in counterdata production. D’Ignazio and Klein develop the notion of counterdata, building on prior case studies about counterdata activism practices.^{34–36} This concept resonates with theories of counterpublics^{37,38} and counternarratives,³⁹ in that it directly acknowledges and attempts to expose asymmetrical power relationships. Counterdata also speak to Milan and Gutierrez’s²⁵ framework of “proactive data activism,” in which activists produce and use data to advance political goals, and to work that has explored how, through data, activism also “engenders new modes of being and acting together” (see p. 202 in Renzi and Langlois²⁶). Counterdata production mounts an explicit, and usually collective, challenge to the data practices (collection, analysis, and deployment) of mainstream, well-resourced “counting institutions,” such as governments and corporations.

As the literature on data activism has shown, counterdata production may be undertaken by activists, journalists, nonprofit organizations, librarians, citizens, and other groups.^{34,35,40,41} Pine and Liboiron⁴² have shown that data activism may also come from insiders and experts looking to reframe political problems. Research on violence as the object of data practices has explored how citizen organizers mobilize the affective and narrative potential of data through “agonistic data practices,”⁴¹ and scholar-activists recording gender-related killings have also reflected on their own practices, including the data challenges and vicarious trauma of recording homicide.⁴³ This study extends this literature by presenting grassroots femicide data activism as an important case study in counterdata production.

Design, feminist HCI, and gender-related violence

As a study in counterdata production, our work also contributes to research in HCI, a subfield of computer science that studies how people use digital systems and design novel interactive technologies to meet the needs of individuals and groups. The connections between feminism and HCI have been explored in numerous research workshops.^{44–47} Drawing from feminist theory, including feminist science, technology, and society’s (STS’s) “attention to the inequities caused by technology’s troubling relationship with gender” (see p. 1303 in Bardzell²⁷), feminist HCI aims to develop more liberatory design qualities that can challenge sex and gender oppression.^{27,48}

Recent work by Almeida et al.⁴⁹ has pointed towards the need for feminist HCI researchers to pay greater attention to gender-related violence as a public health issue. Much of the gender-related violence research in HCI has focused on the (extremely important) projects of designing safe and supportive digital spaces for women and LGBTQ+ people, on violence prevention, and on designing with impacted populations.^{50–54}

Only a handful of studies have specifically addressed the topic of femicide. Some of this work has focused on designing tools aimed at support and prevention. For example, in response to high rates of femicide in Brazil, Silveira, dos Santos, and da Maia⁵⁵ designed a web application to aid Brazilian women in abusive relationships to seek support. Other studies are more focused on digital methods that work to draw public awareness to the issue. For example, in their review of the social media practices of English-speaking Native American advocates active on Twitter, Vigil-Hayes et al.⁵⁶ found that #MMIW was the second most frequently circulated hashtag by this community in 2016. In collaboration with sex workers, Strohmeyer et al.⁵⁷ worked to commemorate lives lost to violence by organizing a march and reflecting on the use of digital technology in memorialization practices. And Alvarado García, Young, and Dombrowski⁵⁸ mention data about femicide and sex crimes against children as areas where human rights organizations attempt to combat data gaps through community-based data practices. Our work is situated in this latter vein of HCI research, which does not aim to provide direct services to women at risk of violence but rather to support data activists who are working to visibilize femicide as a public issue through the production of counterdata.

Femicide and data production

Femicide and femicide are “evolving concepts” (see p. 3 in Fregoso and Bejarano⁵⁹). While their exact definition and scope shift across contexts, they are increasingly mobilized and variously defined in legislation, national statistics, and civil society activism.⁶⁰ The term “femicide” emerged from the feminist work of Radford and Russell,⁶¹ where they define femicide as a form of sexual violence that includes verbal, physical, visual, and sexual forms of abuse. Building on this work, Latin American activists and scholars introduced the term *feminicidio* (femicide) as a way to capture the role of the state in enabling violence against women through either omission, negligence, or complicity.^{62,63} Our use of the term femicide draws from this perspective as well as Fregoso and Bejarano’s (see p. 5 in Fregoso and Bejarano⁵⁹) assertion that femicide encompasses consideration of “the intersection of gender dynamics with the cruelties of racism and economic injustices in local as well as global

contexts.” Additionally, in this paper, we use the term “gender-related violence” instead of the more common term “gender-based violence” to indicate that phenomena such as femicide, feminicide, MMIWG2, police violence against Black women, and LGBTQ+ killings are intertwined with gender oppression but cannot be solely explained by sexism, patriarchy and unequal gender relations, and their analysis requires an intersectional perspective.

Activism on the issue of femicide from feminist and women’s movements, particularly across Latin America, has played a fundamental role in raising awareness and promoting policy change globally. Most notably, mobilization around the disappearances and murders of women and girls in Ciudad Juárez, Mexico since the 1990s and the powerful demonstrations held by the “ni una menos” (“not a [woman] less”) movement in Argentina and across the region since 2015 have brought worldwide attention to the issue of femicide and contributed to the formulation of specific legislation and national plans for the eradication of violence against women.⁶⁴

However, as we have discussed, activists routinely confront a lack of data on the problem. In official records, many cases are classified simply as homicides, and the context and circumstances of the murders are often not recorded.^{5,7,30,65} In the European Union, official data tend to include only intimate feminicides, overlooking other forms of gender-related murder.⁶⁶ In Mexico, scholar and activist Monárrez Fragoso (see p. 357 in Monárrez Fragoso¹³), who documented 442 cases of women and girls killed in Ciudad Juárez between 1993 and 2005, notes that “national statistics do not document the reason for the murder, the relationship between victim and victimizer, nor the various types of violences that the women suffered prior to being murdered. [...] In the face of such absences, it is necessary to find alternative means to understand feminicides with greater precision.”

An increasing number of activists and civil society groups have turned to data production not only to fill in missing data, but also to challenge state bias and inaction, to galvanize public attention, and to repair wounded communities. In relation to femicide data activism specifically, scholars have situated #NiUnaMenos as an example of data activism from the South.²² Our larger research project has cataloged more than 150 global efforts that seek to count femicide and gender-related killing. Ricaurte¹⁷ has argued that these grassroots data activism practices around femicide can configure a form of “epistemic disobedience” to the extractivist and colonial logics present in mainstream data science. While femicide activists acknowledge that they use colonial and extractivist tools to produce data, they bend them towards resistance, memory justice, and care work. Our contribution represents an effort to empirically describe ways in which activist and civil society groups combat missing data by recording and systematizing information about femicide, with the goal of leveraging those counterdata for collective action.

RESULTS

Methodology

Our methodological approach centers the lived experiences, data practices, and goals of diverse activists and organizations, in line with data feminism’s commitment to confronting hierar-

chies in knowledge production by embracing pluralism and making labor visible. As authors, we understand, with Haraway²⁰ and many others, that all knowledge is “situated.” This means “that ‘our’ knowledge is intrinsically politically and ethically situated in its purposes and positionalities” (see p. 102 in de la Bellacasa⁶⁷). To clarify the relationship between our political and ethical standpoints and our methodology, we first acknowledge that the “we” that speaks in this article is not disinterested. That is, we “have allowed [ourselves] to become *interested*” (see p. 90.2 in Stengers⁶⁸), to engage with activist data practices around femicide and feminicide data and become interested parties. Our research team includes people with diverse lived experiences of oppression and various relations with feminism and other social justice issues. What we share is the desire to make a difference through knowledge and technology co-production and a commitment to feminist, intersectional approaches to research. As noted in the [introduction](#), this article stems from a broader action-research and participatory design project that is concerned not only with collaborative knowledge production and technological development but also with actively caring for the already existing community of practice around femicide by supporting their work and connecting activists to each other. Puig de la Bellacasa (see p. 97 in de la Bellacasa⁶⁷) has written that “to produce a caring account, critical cuts shouldn’t merely expose or produce conflict but should also foster caring relations.” This is what Shokooch Valle⁶⁹ conceptualizes as “solidarity as a method.”

The present study draws from a qualitative analysis of 10 gender-related-murder-monitoring projects led by civil society activists and organizations across six countries ([Table 1](#)). This geographic variation allows us to incorporate an analytical sensibility towards how counterdata challenges and practices may exhibit commonalities *despite* variation in geographic context. It is important to note that our aim is not to compare results at the country or regional level or to provide a deeper understanding of the socio-political and economic factors shaping gender-related violence across different countries—these tasks lie outside the scope of this article. Rather, building on the work of Kumar et al.⁷⁰ to integrate Chandra Mohanty’s⁷¹ notion of feminist solidarity into technology design by focusing on “commonalities across differences,” we seek to examine common struggles across diverse contexts while still attending to local differences and particularities.

We selected projects through a purposive sampling strategy that aimed to both understand the phenomenon of anti-femicide data activism and explore monitoring efforts that look at gender-related killings in their intersection with transphobic, racialized, settler colonial, and ethnic forms of oppression and violence. For this reason, some of the projects do not center the category of femicide per se but frame their works through categories such as MMIWG2, LGBTQ+ murders (we use “LGBT+” as the acronym here because this is the way that the project framed their focus, though they started their monitoring effort with a focus on transphobic killings), and killings of Black women and girls by police violence. This methodological choice builds on the data feminism principle “rethink binaries and hierarchies,” which asks us to challenge gender binaries and to refuse to place gender before sexuality, race, ethnicity, or class. In our analysis, we pay special attention to how intersectionality

Table 1. Summary of cases and interviews

Interviewee(s)	Project	Country	Project focus	Year project started	Project status
H.S.V.	Feminicidio Uruguay	Uruguay	femicides	2015	active
Dawn Wilcox	Women Count USA	United States	femicides	2016	active
Raisa Valda and Ida Peñaranda	Cuántas Más	Bolivia	femicides	2014	paused
Nerea Novo	Feminicidio.net	Spain	femicides	2010	active
Eloi Leones	data_labe	Brazil	LGBT+ violence	2016	ended
Annita Lucchesi	Sovereign Bodies Institute (SBI)	based in United States, covers the Americas	missing and murdered indigenous women and girls and two-spirit people (MMIWG2)	2015	active
Deborah Upegui-Hernandez, Irma Lugo, and María Mari-Narváez (advisor)	Observatorio de Equidad de Género	Puerto Rico	femicides and missing women and girls	2019	active
Carmen Castello	Seguimiento de Casos PR	Puerto Rico	femicides, missing women, and sexual abuse	2011	active
Julia Sharpe-Levine and Gregory Bernstein	small nonprofit organization	United States	Black women and girls killed by police violence	2015	active
Julliana de Melo and Ciara Carvalho	Uma por Uma	Brazil	femicides	2018	ended

exacerbates the problem of missing data, compounding activists’ monitoring challenges and requiring the creative use of myriad strategies in their counterdata production efforts.

We conducted semi-structured interviews with 15 participants directly involved in the 10 projects listed in Table 1. The interviews occurred via Zoom between June and August 2020, were conducted in activists’ native languages, and lasted between 77 and 115 min. We aimed to understand the workflow, data production process, and conceptual categories through which activists identified and documented femicide and gender-related killings, as well as their reflections on challenges and lessons learned from their monitoring work. The interview questionnaire was developed based on exploratory conversations with different activists and civil society groups and was tested and adjusted based on their feedback.

The interviews were recorded with permission from the interviewees and subsequently transcribed and analyzed through the qualitative data analysis software NVivo. Our coding process was iterative and collaborative, designed to allow for collective reflection and construction of shared understandings around the data. We compiled an initial codebook based on the interview questionnaire and then revised it to incorporate new categories and insights that “emerged” from our grounded analysis of the transcripts.⁷² Themes that we explore below, such as the importance of memorializing and honoring the lives of women, girls, and two-spirit and LGBTQ+ people or concerns with data ownership and ethics, are examples of categories that were not explicitly included in our interview questionnaire but that gained prominence through our close reading of the interviews.

Throughout the article, we use real names when referring to different interviewees because they told us they would like to be identified in the research. This is also a way to “make labor

visible.”¹⁹ One organization’s identity has been withheld at their request, and they are named as a “small nonprofit organization.” One of the interviewees, H.S.V., is also a member of the research team and, “working the hyphens” as researcher-insider,⁷³ has provided active guidance on the activist perspective throughout the process.

Missing data

Missing data—including completely absent but also sparse, unreliable, unavailable, untimely, and not public data—are one of the primary motivations for activists to engage in counterdata production. Activists provided us with their own analyses for why data were missing, which occurred primarily in relation to two spheres: the state and the media.

First, regarding the role of the state, activists from the United States, Puerto Rico, Spain, Bolivia, and Brazil described how official government data were often absent, incomplete, or inaccurate due to undercounting and underreporting because of lacking or narrowly framed legislation. Moreover, accessing official data through public records requests may involve what María Salguero has described as a “bureaucratic parade” involving time, money, and legal expertise rarely available to activists, something Sovereign Bodies Institute experienced firsthand (see p. 68 of Madrigal et al.⁷⁴). Activists discussed the lack of proper judicial investigation, lack of attention to the context of the murder, misclassification of death (particularly in relation to transgender identity, suicides, race, indigeneity, and interaction with law enforcement), and disputes over legal interpretation of cases. For example, in Brazil, Uma por Uma documented dozens more cases of gender-related killings of women than were legally classified as femicides due to how police and judicial officials interpreted the law.

Table 2. Counterdata production on feminicides: Analytical themes

	Theme	Description
Researching	querying	specification of search queries (word combinations) to identify cases using web search engines
	receiving alerts	mechanisms for learning about new cases (e.g., volunteers, affected relatives, and automated alerts)
	sourcing	information sources (e.g., news media often primary sources; government data or public datasets)
	case tracking	monitoring status of cases and/or availability of new information over time
Recording	extracting unstructured data	database software (choice of software) and database schema (data fields recorded)
	classifying cases	typologies for categorizing cases (e.g., linked femicide, intimate femicide, transfemicide, and MMIWG2)
	managing data	handling of databases (e.g., use of multiple spreadsheets) and ethics of data management
Remembering	memorializing and humanizing victims	strategies to memorialize and tell the stories of the lives lost (e.g., images, art, and storytelling)

Problems with missing data also arise from media coverage of gender-related killings. Across nine of ten projects we examined, activists use news media articles as data sources despite noting how articles tend to provide scant relevant information on victims and to reinforce stereotypes about women and minoritized groups. As Ida stated, “The big problem is that newspapers are careless in publishing biased and bad information.” Importantly, six groups independently observed that stereotypical media treatment is often built on biased police narratives, as police reports tend to be the main sources of information for journalists. Invisibility, misclassification, and bias in the news media were particularly salient in the cases of victims whose identities lie at the intersection of sexual, racial, ethnic, and class divides. Our interviews with activists focusing on MMIWG2, Black women and girls killed by police violence, and LGBT+ violence demonstrated how these murdered people were particularly at risk of either not being considered newsworthy at all or else being misgendered, misidentified, stigmatized, and blamed for the violence they suffered, as has been described in the literature.^{14,33,75–77}

Within the data feminism framework, state and media power relate to missing data challenges at the structural, disciplinary, and hegemonic domains of Collins’s matrix of domination described above. Activists’ own analyses of their socio-political and institutional contexts underscored how state and media institutions can reinscribe and render invisible forms of oppressions, which results not only in missing data but also in harmful consequences at the interpersonal level through gender-related violence and death.

Counterdata production

Activists confront missing data directly by engaging in counterdata production—enacting data feminism’s call to use data science to challenge power. While activists know that “numbers will

not save us”⁴¹ (see also Lehtiniemi and Ruckenstein⁷⁸), counterdata production efforts aim to recover from invisibility the lives and stories of murdered people and provide a more complete and nuanced understanding of the structural nature of this violence. Activists often rely on media coverage and state institutions as sources of information, yet they use them strategically and creatively as spaces for intervention, seeking to influence both decision-making and discourse around gender-related killings. In this subsection, we describe three common workflow stages we identified across counterdata production efforts: researching, recording, and remembering. Table 2 summarizes the analytical themes we highlight in association with each stage. While projects vary in their geographies, contexts, and configurations, we find that activists face some common challenges in terms of monitoring labor. To overcome these, they make creative use of available resources, develop new skills, reflect critically and continuously on their practices, and combine, chain, and adapt technologies to their specific situations.

Researching

Researching is the foundational step of activists’ counterdata practices. It concerns the process of discovering new cases and obtaining further information on previously identified cases. Based on our interviews with activists, we organize researching tasks around four dimensions: querying, receiving alerts, sourcing, and case tracking. Each has important implications for the production of data and the design of data tools for monitoring femicide.

Activists’ researching process often involves querying, or the use of search queries to learn about potential new cases through news articles or other sources. This typically involved manually inputting queries into web-based search engines, such as Google, and was a common research step across all projects—though, as we will discuss further, one not as fruitful for projects

centered on racialized or transphobic killings, which tend to receive comparatively less public attention and media coverage.

Identifying relevant queries can be a process of trial and error. Activists typically try to use more precise terms to narrow the search results. For instance, Helena, Dawn, Nerea, and Gregory affirmed that using geographic markers or graphic keywords, such as “suffocated,” “stabbed to death,” “sexual abuse,” or “husband kills wife” was more likely to yield relevant results than using more generic search terms such “woman killed.” Activists also study the biased and discriminatory language used by the media and deploy this in their queries. For example, Helena’s search query, translated into English, looks like this:

(murder OR homicide OR femicide OR feminicide OR murdered OR dead OR death OR killed OR murdered OR shot OR stabbed OR struck OR strangled OR “lifeless”) AND (woman OR girl OR “a young woman” OR “a teenage girl” OR “a girl” OR “body of a woman” OR prostitute OR “sex worker” OR “man dressed as a woman”).

Even with targeted keywords, however, search engines might return results from other countries or cities or cases of violent death that are not linked to femicide or gender-related violence. This creates an additional filtering task, where activists are required to comb through disturbing and graphic content to identify cases of femicide and gender-related violence.

In addition to manual searching, receiving alerts through various mechanisms is another important way in which activists learn about new cases. These mechanisms include the use of automated alerts and notifications from people in their networks. All projects use some combination of these mechanisms in the researching phase. Six of the projects either used or had experimented with using automated alerts based on search queries, like Google Alerts. However, activists reported facing challenges with automated alerts, such as the fact that they were often time consuming and overwhelming to sort through, returned duplicate results, and did not yield many or any results from smaller, local news outlets. Given the volume and imprecision of the cases they surfaced, some activists, like Dawn and Carmen, had stopped using automated alerts altogether. Based on her experience, Carmen found that the most effective way to learn about new cases in Puerto Rico was to go directly to local printed newspapers as well as watch the daily news on TV, while Dawn found manual web searching comparatively more effective for the US context.

Across the projects, receiving alerts from people—such as project volunteers, followers on social media, and affected families or friends—became essential to either learn about new cases or add to existing ones. As Helena stated, “I would say that my source is more human than Google Alerts.” Communicating with families was useful to complement, expand, corroborate, or change information. Raisa, Nerea, Helena, and Annita observed that some families came to them directly—via email, social media, or messaging apps—to provide information on cases, particularly once activist efforts became better known. According to activists’ accounts, these families reached out to make sure their loved ones were included in the databases as a way to honor their lives, create public awareness, or advocate for justice. Annita recalled one daughter crying at the prospect of her mother being listed in the Sovereign Bodies Institute’s (SBI’s) database because she said her mother had always felt that she did not matter, “so to finally count to someone meant everything

to her.” While datafication can be a technology of distance and extraction when used by the state or corporations,^{17,20} here, grassroots activists are bending data towards a kind of community archiving practice,⁷⁹ enacting the intimate work of caring for the memories of those killed in violence.

Another dimension of the researching process concerns the use of specific sources of information or evidence about cases, which we refer to as sourcing. The majority of the projects (7 out of 10) rely primarily on news media as sources of information about cases. The other three projects, led by Observatorio de Equidad de Género, SBI, and a small nonprofit organization in the United States that focuses on police killings of Black women and girls, use news media as supplementary sources. The latter two organizations, in particular, highlighted the need to “get creative” with sources in order to overcome missing data challenges related to bias in news media coverage of Indigenous and African-American people. Beyond news sources, they rely on relationships with families, public data compiled by other civil society groups, court records, archival material, social media posts, and public information requests.

There are many associated challenges with using media reporting as a primary source. Lack of information on the context, victim, and perpetrators are on the top of the list. Uma por Uma cautioned against using the first reports to emerge on a particular case, because cases are dynamic and early reports contain a great deal of incorrect information. All activists expressed the need to understand context to classify cases properly. Biased geographic coverage is another challenge, as mainstream media tend to focus their reporting in capital or big cities, excluding cases from rural, remote, or marginalized areas. To compensate, several activists explicitly search for local, smaller, and even amateur news outlets, additional labor that is compounded when activists cover larger geographies, such as Argentina and Brazil. Uma por Uma, for example, compiled a list of “blogs do interior” (blogs from rural and remote areas) that they checked for potential cases, and Carmen regularly checked media sources from small towns (pueblos) in Puerto Rico. Media rarely note (or incorrectly report on) the race, ethnic, or tribal identity of the victim and frequently misgender murdered trans people, so activists noted that they had to take special time and care to triangulate these details.

The research process is not only about documenting new cases but also about case tracking, that is, monitoring the status of cases over time as they move (or do not move) through the justice system. As Julliana and Ciara emphasized, cases are dynamic and constantly changing. Debora reinforced this point, noting they need to work “to see where the case was going.” Tracking cases aims to clarify or update the database, rectify errors, and add details. As Annita stated, “the tracking process allows the activists to identify cases classified as undetermined and reclassify them correctly.” For example, both Uma por Uma and Helena keep track of cases where women were seriously injured by their intimate (ex)partners, following up, and later adding them if the woman dies. Most of the activists have a list of articles “on hold” while waiting for new information to complete the case. Carmen even named her project “Cases Tracking” (Seguimiento de Casos). She follows cases throughout each calendar year, updating her database and adding explanation notes when cases are clarified.

Recording

In the recording stage, our analysis highlights three key dimensions related to how activists keep records of the data they produce: extracting unstructured data from the various sources described above into structured datasets located in text documents, spreadsheets, and/or database management systems (DBMS); classifying cases according to diverse typologies; and managing data.

With regard to extracting unstructured data, the majority of the research participants (9 of 10 projects) rely on spreadsheet software (mainly Google Sheets and Excel) to record data on individual cases. One project, Seguimiento de Casos, preferred to keep the records only in Word documents. Participants see spreadsheets as information structures that lend themselves to recording data relevant to cases and visualizing it more easily—including via potential conversion into maps, as Helena noted. They choose specific software based on its fit with their resources, knowledge, and workflow. Google Sheets, for example, is free and facilitates collaboration in the data production process. Two of the participants use proprietary databases despite the added cost because they needed to include multimedia files related to cases (like images) or build more complex relational structures and queries with their data.

The schema for each activist database varied depending on the scope and objectives of each project, but there are some commonalities. All datasets contain identifying information about the murdered person, which might include name, age, and occupation. Less frequently recorded fields include information about race or ethnicity, tribal identity, link to an image, and number of children. The majority of data schema also include fields about the perpetrator and the crime—for example, name, age, and occupation of the perpetrator, as well as relationship to the victim. Commonly recorded information about the crime includes date, location, and method. Other fields include murder weapon and whether there were prior reports of abuse or restraining orders. Some activists record fields that no other group records, reflecting their different intersectional missions. For example, `data_labe` logged whether a person was gay, lesbian, bisexual, or transgender. SBI has a field to indicate whether an Indigenous woman was murdered within 50 miles of extractive industries because Indigenous communities and researchers have documented how these industries lead to a rise in sexual violence and trafficking.⁸⁰ Finally, for projects like *Uma por Uma* and *Seguimiento de Casos* that follow cases through the judicial system, their schemas have a number of related fields, including case status and sentencing.

Data ontologies, the naming and ordering of fields in a database, have political effects that activists are attuned to. It matters, for example, how women are described by recording their names in a field titled “victim” versus a field titled “name” or how they are defined as mothers or not mothers by adding a field for children. It also matters to what zoom level are locations included on a map, whether the use of different weapons is noted, or whether the role of the state is highlighted by adding fields for recording prior police reports or the judicial status of a case. Because “as new possibilities for description emerge, so do new kinds of action” (see pp. 254 and 255 in *Hacking*⁸¹), by (figuratively) putting at the scene of the crime different and differently defined entities and actors, activists provide specific

descriptions of femicide and thus potential avenues for action.⁸²

All activists articulated that their data schema is dynamic—constantly undergoing changes as they learn more about the individual cases, the issue of gender-related violence, and dialogue with different groups (families, law enforcement, media, and other activists). The way they modify their data schemas shows activists understand that arrangements of data are political. As Helena said, in the history of her classification categories, “there is also a history of how I understand the cases.” Activists add or modify fields as their understanding and political objectives evolve, which also means that they continually revisit and update existing cases. Annita described, “we’re always adding new data points, which unfortunately means we always have to go back and add those points for the 4,000 cases already in the system.” Yet classification is not always additive. For example, Dawn described how she began the project logging how many children a woman had but later removed that category: “I think it’s important to remember that these women mattered not because they were mothers, not because they’re somebody’s sister, daughter, but because they had value simply because of their own worth.”

Counterdata producers have also developed their own typologies for classifying cases. These may be relatively simple: *Cuántas Más* and *Uma por Uma* simply flag whether the case is a femicide or not—although *Uma por Uma*, for example, takes into consideration other aspects of the case and its context in the stories they write for each case. Other activists have evolved more complex categorizations, with sub-types of femicide, such as intimate partner femicide, stigmatized occupation femicide (sex workers, for example), linked femicide (when a perpetrator kills someone the woman loves to hurt her), transfemicide (murder of a trans woman), femicide suicide, and attempted femicide. Nerea outlined how [Femicidio.net](#) had started with a very fine-grained typology of femicide but eventually streamlined it into six broader types to facilitate analysis.

Activist typologies of gender-related violence often intentionally do *not* correspond to legal definitions in their countries—partly because, where femicide laws exist, they often narrowly focus on intimate partner violence. Part of the purpose of producing counterdata is to count and classify *differently*, to challenge narrow understandings of the problem and build a political case for expanded conceptualizations of its diverse manifestations. This does not mean activists wholly invent definitions. Some follow existing international protocols—for example, Observatorio de Equidad de Género and Femicidio Uruguay use the United Nations’ (UN’s) *Latin American Model Protocol for the investigation of gender-related killings of women (femicide/femicide)*.⁸³ Dawn noted that she follows scholarship in criminology and gender-related killings in order to inform her classification. And Annita emphasized that SBI responds to any family requests to track different variables that they deem important. In addition, activists share their typologies and influence each other: Carmen shifted her classification from *asesinato* (murder) to *femicidio* based on conversations with Observatorio de Equidad de Género. Dawn began recording information on tribal affiliation based on her friendship with Annita. Counterdata production, thus, emerges as a continuous process of collective reflective practice.

Finally, the third core dimension of recording is managing data, which encompasses both how counterdata producers handle their databases and how they navigate ethical questions related to data privacy, respect for families, and accountability. Regarding the handling of databases, half of the projects have multiple datasets and databases that they group in different ways. For example, Carmen has a word processing document for missing women and another for femicide cases. If a missing woman is found murdered, then she moves that case from one document to the other. Observatorio de Equidad de Género and SBI also monitor missing people, not only murdered people. Annita describes how they maintain five different databases that cover different time periods, different geographies, and different gender identities, with a separate database focused on murders of two-spirit people. Dawn groups cases into separate databases by year. Some activists also maintain separate spreadsheets for cases in progress and cases that have been fully recorded.

Across all projects, activists voiced concerns with data privacy and the ethics of publicizing counterdata on gender-related violence. One organization, *Cuántas Más* in Bolivia, disclosed that they decided to take their femicide map offline when they realized that, rather than bringing justice, it might further stigmatize certain regions in their country. This illustrates activists' awareness of data's power to portray deficit narratives, that is, narratives that communicate the "difference, disparity, disadvantage, dysfunction, and deprivation" of minoritized groups (see pp. 58 and 59 of D'Ignazio and Klein¹⁹).⁸⁴ In the case of *Cuántas Más*, they shifted to aggregated statistics and stories as a refusal to participate in deficit narratives. Helena described how she occasionally received and implemented requests from relatives to remove a post on social media about a woman. For SBI, data sharing issues were particularly salient: they had received, and declined, several requests from law enforcement offices in the United States and Canada to access their data. "We do have data sharing protocols that we've established, but I think a lot of the requests that we get are based on assumptions that the data [are] just kind of like this divining tool that anybody can just jump in and use it, and that somehow all of the mysteries of this crisis will be solved from their armchair with casual exploration." SBI protects their data to prevent uses that are voyeuristic, opportunistic, and/or not in solidarity with the goals of Indigenous people and families.⁸⁵ Ultimately, activists see their data-recording efforts primarily as a means to seek justice for and memorialize murdered women, girls, and two-spirit and LGBT+ people.

Remembering

Remembering is the final main aspect of activists' counterdata workflows that we highlight based on our analysis. It speaks directly to activists' labor to not only document femicide and gender-related violence but to confront the limits of simple quantification. We should note that activists publish and circulate their data in a variety of ways, ranging from maps and reports to art projects and mobilizations, aspiring to provide evidence for shifting policy, to challenge harmful cultural narratives, and to galvanize political will for change. A full discussion of these outputs and goals, however, lies outside the scope of this paper, in which we focus on the motivations for and work of activist data production. For many activists, a central motivation for recording femi-

cidines is to remember, memorialize, and care for each person's life. "First and foremost, it's for the women," noted Annita, and Dawn said, "And I felt like [logging their information] would memorialize these women, which was very important. It would show that they were more than just statistics on a page."

This motivation comes as a response to the violence and disregard that the person experienced at the hands of the perpetrator, the media, and the state judicial system. Activists rejected and corrected the misgendering of trans victims, the misclassification of racial and tribal identities, and other important identity characteristics misreported in news reports or misclassified by the state. For *Uma por Uma*, the lack of media coverage about poor women's murders was an affront to their dignity, "...why did we want to count everyone? So that these cases that journalism does not consider—from the news point of view, it will be a mention of two, three lines—so that they will not disappear..."

All of the activists talked about the importance of humanizing the people whom they record in their databases. They do not want to reduce a person to their death but to remember them as full people. Their concern is, as Ida from *Cuántas Más* said, "how do we explain what we have lost?" Several activists discussed the importance of including images of the person directly in their databases, even though images of the person in life can be hard to find and involve long searches on social media or working directly with families. They do this additional labor as a way of countering the media's visual portrayal of cases with murder scene images or mug shots, a tendency that Gregory characterized as "dehumanizing by design."

This desire to humanize has motivated activists to pursue various memorialization strategies beyond images, including digital storytelling, art, and data visualization. Dawn, for example, created a video set to music that includes photos of the over 1,800 women she included in her database in 2018. *Cuántas Más* included the favorite mariachi song of one woman on the web page commemorating her life because she had played in a mariachi band. Art and storytelling were central to the small nonprofit organization that monitors Black women killed in police violence: they produced large posters of women's faces for people to carry at marches, worked with a musician to produce a song about the victims, and even commissioned a play for families that re-imagined their daughters back into the world and depicted what they would have gone on to do. For *Uma por Uma*, careful and humanizing storytelling is a way to restore dignity to a person who has been wronged: "...you have a well-treated text, well cared for, with dignity, so that the memory of this woman will be preserved as it should be and justice will be done."

Even the simple act of counting can constitute ritualistic, even spiritual work for some activists. Helena noted how there was a monthly rhythm to logging cases, and if there seemed to be fewer cases, she became alarmed and started scouring the media for cases she may have missed. Annita from SBI described the work as "spiritual" and stressed the importance of culturally grounded data production and care practices, drawing inspiration from Indigenous cultural and spiritual epistemologies. Counting alone is not justice but it is a beginning, "entering them in the database doesn't necessarily bring their case to justice and it isn't justice for them or their family on its own, but it does feel like we're giving them a little bit of peace knowing

that they're being counted and they're being honored and they're being prayed for."

Finally, all of the activists discussed the emotional and mental health challenges for themselves and their team in engaging in this work and shared their strategies for self- and collective care.⁸⁶ Raisa from Cuántas Más described why they had to develop ways to care for their team, "It is not easy to read ten cases of femicide and put them on a table, disaggregate them, have to put a name, age, circumstances and all that detail, without it affecting you emotionally." Eloi from data_labe discussed his repugnance the first time he encountered data about trans people's manner of death, because the methods were so horrible and hate filled. Many interviewees described the tears they have shed while doing the work, either in the face of very extreme cases or because of the sheer volume of cases each day and the magnitude of injustices. For example, Nerea told us about one episode where she broke down and cried, "in the end there is the secondary trauma that women who work with first-hand or second-hand violence suffer...," while Julia compared her own feelings with those of families, "...whatever we're experiencing will never be close to what these families are experiencing." In this way, the emotional labor of caring for data becomes an important form of memorialization—a way of recognizing the magnitude of loss for a family and a community as well as witnessing and sharing in that grief, to whatever extent one is capable.

DISCUSSION

This paper has explored grassroots activist and civil society efforts to produce counterdata about femicide and gender-related killings. Guided by the principles of data feminism, we discussed the data practices of 10 grassroots monitoring initiatives to understand the manifestations of missing data that activists encounter, the tactics they use to research and record counterdata, as well as the technical, informatic, intellectual, and emotional labor they face in doing this work.

Grounded empirical research of citizen data and counterdata practices such as this one have much to offer critical data studies as an emerging field. We, the authors, share the numerous concerns about datafication, surveillance capitalism, data extractivism, and the New Jim Code articulated by Zuboff, Ricaurte, Benjamin, and so many others.^{16–18} And yet, as Ricaurte asserts, there are "possible alternative data frameworks and epistemologies that are respectful of populations, cultural diversity, and environments." (see p. 352 of Ricaurte¹⁷). Such alternative epistemological approaches to data science include frameworks such as data colonialism and data feminism theorized by scholars but also, and importantly, are being created and advanced through activist data practices, such as the Indigenous data sovereignty movement, Data 4 Black Lives, and anti-femicide data activism, among many others.^{87–89}

As we have demonstrated, grassroots counterdata production about femicide invites us to imagine a data science, epistemology, and ethics that rigorously takes power and people into account; that understands how structural inequality produces missing and flawed data and develops creative counterdata strategies to mitigate that; and that views data science not as a technosolutionist panacea but as, first, an intimate act of

care, witnessing, and memory justice and, second, as a vector for social change. This is not to romanticize the very difficult and fraught labor of anti-femicide data activists but simply to offer that mainstream data scientists and critical data studies scholars have much to learn from these reflective practices, particularly those of us who wish to mobilize data science in solidarity with this call from Ricaurte (see p. 350 of Ricaurte¹⁷): "We can reverse extractive technologies and dominant data epistemologies in favor of social justice, the defense of human rights and the rights of nature."

Our work to describe and contextualize grassroots counterdata practices around femicide also yields implications for work in HCI to support these practices. First, digital technologies tailored to the informatic tasks of counterdata collection could play a significant role in supporting and sustaining activists' labor to produce counterdata about gender-related killings. Since all groups face time and resource constraints, designs could incorporate better tools for volunteer and crowdsourced case detection and/or partially automate case detection. Interactive technologies could potentially alleviate some of the emotional burden of undertaking this work, for example, by reducing exposure to violent content through partial automation of case detection and case tracking (in the researching stage) or automating information extraction (in the recording stage) from news and social media. While we are loath to fetishize machine learning, it is a potentially useful tool to apply to activist tasks of information discovery, retrieval, and verification. For example, through the Data Against Femicide project, we have co-designed a tool with activists that uses machine learning as a means to facilitate the human labor of detecting, categorizing, and recording cases. In addition, novel visualization techniques could possibly help to support activists' creative strategies to memorialize people and reframe public debate around systemic violence. While better design will not "solve" the challenges activists face, we see opportunities for HCI, and specifically feminist HCI, to play a significant role in supporting and sustaining activists' labor to produce counterdata about gender-related killings.

Beyond femicide data activism, there are also important opportunities for HCI to both theorize and support data activism and counterdata production more broadly. There are numerous other issues around which civil society groups produce counterdata. These include human rights violations data in Mexico,⁵⁸ police killings,^{34,41,90,91} gun violence,⁹² protest events,⁹³ maternal mortality,⁹⁴ COVID-19 monitoring,⁹⁵ and citizen environmental monitoring.^{96,97} Data activism has become an important site for civic engagement and political action,⁹⁸ and thus, it is an important sociotechnical site where informatic tools may work to uphold social justice. This grounded study of femicide counterdata production helps to open a line of inquiry into what this work could look like for critical data studies and HCI, including not only the development of future tools but also research into the epistemologies, processes, and methods by which new designs are made. Ultimately, we pose this question to the fields of critical data studies, data science, and HCI: how can our fields support and sustain the already existing practices of counterdata activists to heal their communities and to hold the state, corporations, and the media accountable for their role in upholding oppression and violence?

EXPERIMENTAL PROCEDURES

Resource availability

This was a qualitative study based on interview data.

Lead contact

Further information and requests for resources should be directed to and will be fulfilled by the lead contact, Catherine D'Ignazio (dignazio@mit.edu).

Materials availability

This study did not generate new unique reagents.

Data and code availability

Data reported in this paper may be shared by the lead contact upon request and only in line with our human subjects protocol. This paper does not report original code.

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AUTHOR CONTRIBUTIONS

Conceptualization, C.D., H.S.V., and S.F.; methodology, C.D., H.S.V., and I.C.; investigation, I.C., A.M.C., M.G.-M., C.D., and H.S.V.; formal analysis, I.C., A.M.C., C.D., and M.G.-M.; writing – original draft, I.C., C.D., H.S.V., A.M.C., M.G.-M., H.S., and W.S.; writing – review & editing, I.C., C.D., H.S.V., A.M.C., and H.S.; funding acquisition, C.D. and S.F.; resources, C.D.; supervision, C.D.

DECLARATION OF INTERESTS

C.D. is on the advisory board of *Patterns*. H.S.V. is participating in this project as both a researcher and a femicide data activist. The other authors declare no competing interests.

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