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DIGITAL DUST AND VISUAL NARRATIVES OF FEMINICIDIOS CHIARA L. BERNARDI

#### Abstract

The murders of women in Ciudad Juarez, known as *feminicidios*, is an issue that is acquiring relevance in gender and activist studies. To date, however, the count of women missing or killed in the city has remained vague and uncharted, making the issue difficult to *quantify*. In this article, I discuss the visual narrative offered by data and information—both textual and visual—scattered online and present Ciudad Juarez "Feminicidios Reclassification Project" (FRP), a project and a database that I have personally created and currently curate as part of my collaboration and active involvement with local human rights activists, mothers of murdered or missing women, and émigrés from Ciudad Juarez.

*Keywords:* empiricism, data, feminist quantitative methods, feminist data studies, *feminicidios* 

## The Feminicidios of Ciudad Juarez - The Invisibility of the Missing

For more than a decade, Ciudad Juarez has been characterized, alongside many cities in the northern borders of Mexico, by its cartel-related violence and high murder rates. In such an orgy of violence, a major issue such as the feminicidios (i.e., a term for gender-based hate crimes referring to the murder of girls and women) has struggled to come to the surface despite its more than 20 years of continued presence in the city. To date, there is no database or any effort to digitize the reports of missing women and there is no historical data to statistically evaluate the number of disappearances. Hence, there is no easy way to (statistically) assess the issue, even when women and even girls, at times as young as six, are being abducted and *go missing*, many of which are only to be found or reported as tortured or murdered (Washington, 2011). As a result, feminicidios is concealed and the lack of statistical evidence specific to Ciudad Juarez makes the disappearance of women and girls a speculation that relies on observations from mothers. However, mothers and activists, alike, work outside of the margins of political and governmental institutions, and are, therefore, not taken seriously. This lack of visibility is further exacerbated by misogynist and/or patriarchal views and attitudes that permeate and often exert undue influence on the how feminicidios are perceived and handled (Pantaleo, 2010).

In today's data-driven<sup>1</sup> culture, the issue of missing and murdered women in Ciudad Juarez has remained stationary, not coming to the fore like the other elements of violence and decay that the city has experienced and continues to experience. It has, therefore, remained a local issue, something that mothers, activists, and local non-government organizations (NGOs) would try to *deal with*,

<sup>&</sup>lt;sup>1.</sup> Data is here intended from a statistical perspective as the facts and figures from which information is obtained and conclusions can be drawn. Collections of data are fundamental for statistical analysis: the census is based on the collection of data, the raw material to draw conclusions on the distribution of various indicators amongst the population.

while also having to face accusations of spreading the 'myth' of feminicidios in Ciudad Juarez (Hooks, 2014).<sup>2</sup> This silence and lack of care is not new to feminist reflections and theories, and political sociology focused on the Global South.

Feminist philosopher Nancy Tuana's formulation of 'the epistemology of ignorance' (Tuana, 2006) but, also, concepts such as the *politica del abandono* used by political sociologist Luis Herrera-Robles (Herrera-Robles, 2009) can help explain the state of complete abandonment of the city of Ciudad Juarez. The abandonment is nothing but the choice to leave a city, a place or a space to itself, and in the case of Ciudad Juarez, the abandonment follows what feminist philosopher Nancy Tuana has called 'willful ignorance.' As Tuana explains: "willful ignorance is a systematic process of self-deception, a willful embrace of ignorance that infects those who are in positions of privilege, an active ignoring of the oppression of others and one's role in that exploitation" (Tuana, 2006, p. 11).

In 2009, Herrera-Robles lamented a complete lack of interest towards the complexity of Ciudad Juarez and the easy solutions offered by the Mexican government to put an end to the orgy of violence, choosing to completely abandon the city to itself. The failure on the part of institutional and non-institutional apparatuses to penetrate the complexity and multiplicity of the city responds to the choice to not-see it or, to use Tuana's epistemology of ignorance, to "not care to know," and, thus, ignoring the issues of women bodies' disappearances and murders, as well as the city's problems as if expecting an almost *natural solution* to one day arrive (Tuana, 2006, p. 4).

Ciudad Juarez has become a socio-cultural and political assemblage, where the inability to solve its problems merges and enmeshes with political stagnation, violence, corruption, and impunity that finds roots in the corrupt system that governs and has governed Mexico (Swenson, 2017: Washington, 2011). As a consequence, Ciudad Juarez lacks any form of guidance or ethics of care for the well-being of women and girls. It is the stage and the victim of political inability, sudden, forceful and short-lived industrialization, as well as poverty, corruption, and drug smuggling (Comision Nacional para prevenir y erradicar la violencia contra las mujeres, 2016; Flores, 2011). The politics of abandonment generate a vicious circle where institutions and civil society, willingly or not, leave the space and isolate the place. As a result, Ciudad Juarez exists in a perpetual condition of lack-of interest, lack-of governmentality and inability to deal with the complexity of the city. The abandonment of the city is best exemplified by the abandonment, both material and figurative, of women's bodies. Building upon efforts to re-instate quantitative methods in feminist theory and merging these with digital archaeology as proposed digital media scholar Jussi Parikka (2015), I readapt the concept of "dust" to analyze and bring to light the visual narrative of feminicidios in Ciudad Juarez in the digital realm (p. 85). I have done so by transforming what is scattered online, website articles, blog posts as well as pictures of mothers campaigning against the politics of silence. Hence, the *dust* that inhabits the World Wide Web is brought together, concentrating particularly on the images that have to date borne witness to the feminicidios. The aim is to understand the textual and visual narrative that lives online, and can tell us more about feminicidios. In this paper, I specifically focus on images in an attempt to understand the visual narrative behind the discussions on the issue of feminicidios, the missing and murdered women of Ciudad Juarez, and what actors have come to symbolize this tragedy. I argue, aligning with Tuana's arguments, that this activity of finding, cataloguing, and making a live database is firstly a way to counter the willful ignorance in which feminicidios research has been stagnate and, secondly, a way to contribute to feminists calls to include more steadily quantitative data into feminist research (Huges & Cohen, 2010; Scott, 2010). Feminism has long argued that quantitative methodologies can and should be included in questions of feminist activism and theory, and merge with qualitative methodologies in order to have a full picture of important gender-related issues (Huges & Cohen, 2010). In the case of the "Feminicidios Reclassification Project," I argue that the quantitative analysis that comes out of the visual narrative helps understand and quantitatively frame what aspect of feminicidios has come to the fore and how the issue has been visually

<sup>&</sup>lt;sup>2</sup> The work of the Observatorio de Feminicidios and the organization Nuestra Hijas de regreso a casa has, however, has done an outstanding job in working towards the identification of the correct numbers. Their data identifies a count of 1,440 feminicidios in Ciudad Juarez alone until 2013 and more than 4,000 cases of feminicidios in Mexico in 2013-2014. The organisation Nuestra Hijas de regreso a casa published, in January 2017, a report on the cases of murders in Mexico, being able to count circa 2,000 feminicidios between 2006 and 2016, the youngest victim being an eleven-year-old girl. See <a href="http://www.jornada.com.mx/2018/03/07/opinion/002a1edi">http://www.jornada.com.mx/2018/03/07/opinion/002a1edi</a>

rendered. Consequently, both Ciudad Juarez as a socio-cultural and political assemblage and feminicidios, remain trapped into a framework of being present while also failing to be seen (Lury, 2014; Tuana, 2006).

Aligned with critical feminist epistemology and feminist empiricism that have relentlessly tried to "inform debate about the contemporary concerns of those using quantitative methods for gender research," I would argue that the power of data, statistics, and visualization of statistical data (also referred to by Michel Foucault as *biopower*) emerge in new digital cultural analytic forms discussed in the next section on feminist datafication of culture (Huges & Cohen, 2010, p. 190).<sup>3</sup> The missing numbers and the uncertain data on missing and murdered women in Ciudad Juarez are a form of biopower, and the uncertainty on who is missing and murdered makes the issue intangible, invisible, uncountable and therefore non-existing altogether. Therefore, feminicidios undergo a continuous "activity of bordering and making of disappearance" (Lury, 2014). Nevertheless, this form of biopower, the political missing-ness of women's disappearances and murder in the city has often been resisted and countered in multiple ways, although never systematically and never to levels that have brought attention of policy makers, NGOs, or international bodies. Therefore, it has been families, bloggers, artists, journalists, and local organizations that have had the greatest impact when considering how their activism has been documented online, effectively allowing it to be indexed, available, and retrievable online.

As a result, traces or clues, as micro-historian Carlo Ginzburg proposed (Eco & Sebeok, 1984), are on the digital layer at the margins of visibility from where counter-politics of abandonment and silence surround feminicidios. Scattered online, such data becomes part of the growing *digital dust*, a term widely used to indicate the endemic side effect of datafied culture. Traces, or clues, take

many forms or formats such as petitions, pictures of marches and protests, articles, video and audio documentaries, or even podcasts. Increasingly, digital dust takes the shape of short messages and hash-tagged keywords. What is unprecedented is how everything on the Internet has been annotated by search engines algorithms and ordered according to their importance (following the logics of the ranking algorithms), and ultimately meaning that they are searchable, although their forms or formats might make them difficult to find.

The disinterest seen towards feminicidios by the local, state, and federal authorities and the superficial policies employed to address it in the city,<sup>4</sup> has had the effect of ignoring the problem. Aggravating the situation has been the lack of organized and statistically substantiated historical data on feminicidios, which has almost made feminicidios disappear altogether (Pineda-Madrid, 2011). Without any statistical weight or rigor, evaluating and assessing feminicidios lacks validity. What follows is a methodological overview of my study, which adheres to established feminist reflections on the need to re-evaluate the "significance of quantified and quantifiable data" with the aim to petition for social justice and to "escape [...] simplistic dichotomies" (Huges & Cohen, 2010, p. 190) used to oppose quantitative and qualitative analysis. Next, I discuss how data, statistics and technology (in this case a database) have been employed to create the Ciudad Juarez 'Feminicidios Reclassification Project' as a way to counter the silence with an archive that can be retrieved, parsed, analyzed (for corpus linguistics and sentiment analysis), and document the rhetoric and the narrative around feminicidios in the city.

#### **Datafication of Culture and Feminist Data Studies**

Images —whether visual, text-based, or sensorial—are a vital part of communication. The power of visual address lies in the significant means by which people (e.g., artists and activists) use images to convey meaning, tell stories, stimulate curiosity, inspire delight, incite shock, promote learning, and invoke action. Further, feminist visual modes of address are counterpoised to

<sup>&</sup>lt;sup>3.</sup> In its original formulation Foucault's (1978) biopower was to be looked at as a way to ensure *governmentality*, or the active decision from disciplinary and repressive apparatuses and technologies of power to decide and dictate normativity (or 'who is fit?') and justify the existence of specific spaces such as cemeteries, clinics, prisons and schools. In the case of Ciudad Juarez biopower is exercised through the lack-of data on the breadth and depth of the issue. The world of statistics, Foucault argued, was a world of control, a way to create docile bodies, establish disciplinary and surveillance societies.

<sup>&</sup>lt;sup>4.</sup> In 2009 the local government introduced the so-called Protocolo Alba that raises the alarm of disappeared women. To date, there isn't any evidence that the protocol has succeeded in lowering the number of feminicidios or abductions in the city (Comision Nacional para prevenir y erradicar la violencia contra las mujeres, 2016).

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the transmission and passive consumption of knowledge conveyed and dictated by those in power such as political institutions and neoliberal markets. Artists and activists, discussed in this article, invite participants to produce rather than consume knowledge through creative activities. They call upon people to use modes of communication that value multiple ways of knowing, and summon diverse communities across socio-cultural spheres to take stock of what needs to be done, to speak-out, and to take collective action to solve social and political problems faced by women today.

Digital cultural production has made data a key component of everyday life. The ubiquity of digital data is referred to as 'datafication of culture' (Cuckier, 2013; Mayer-Schönberger & Cuckier, 2013), which posits that the increasingly massive volume of information collected from digital technologies affords new means of understanding complex social processes. The continued encounter between culture, "modes of analysis based on the benefits of correlation," and digital data analytics gives culture an unprecedented spatiality and presents an opportunity for gender and feminist research. Following the developments in many fields, among which feminist scholarship that employs visualization to "develop effective methodological tools [...] to marry theorizing with necessary complex analysis of empirical data," it could be argued that visualization is becoming a new way of mapping cultural data (Denis, 2008, p. 668). More specifically, whether it is in the form of the effective infographics or impactful renderings of complex statistical analyses, a new and necessarily cumulative form of doing cultural geography is emerging (D'Ignazio, 2015; D'Ignazio & Klein, 2017; Tufte, 2001). Data visualization proposes, or even perhaps initiates, a spatial and analytical dimension that has been at the center of feminist cartography. Data visualization has yet to be fully appreciated as part of feminist activist practices for its power to give voice to disempowered and marginalized communities (Pavloskaya & St.Martin, 2007; Tuan, 1979).

Feminist cartography has long employed cartographic knowledge and mapping tools, such as GIS (geographic information system), to give a voice to women and marginalized communities while open source mapping software has been used to counter silence, oppression, and disinterest in many areas of the Global South (Bernardi, 2017). In the context of Ciudad Juarez, activists and academics involved in the discussion and the uncovering of the breadth of feminicidios have used mapping tools, such as Open Street Map and Google Maps, to pinpoint the locations and the number of murdered bodies found scattered in the city and the surrounding desert between 2016 and 2017 (Figure 1 and Figure 2).



Figure 1. El mapa de los feminicidios en Mexico 2016 y 2017.

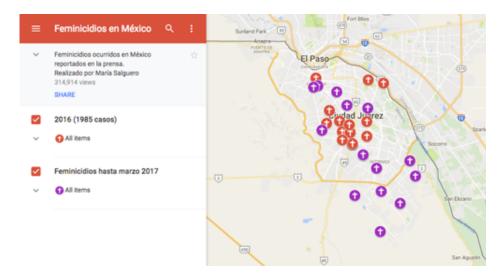


Figure 2. Detail of El mapa de los feminicidios en Mexico 2016 y 2017.

#### **Cartography and Feminist Data Visualization**

In her critique of data visualization, feminist sociologist D'Ignazio (2015) imagines the ways in which feminist research would implement visualization, privileging what is missing, disregarded or neglected in order to give visibility to, otherwise, invisible issues. Instead, anthropologist Jacqueline Urla (1993) has reflected on visualization and maps what is 'missing' as a form of resistance. Urla's (1993) discussion on the mapping of Basque identity in Spain reiterates something that counter-mapping artists, indigenous mappers, and alternative mappers have experimented for years in the bringing the *bordered* beyond the margins, and thus making a neglected issue visible (Simmel, 1997). Feminist critique and epistemology has, as previously highlighted, long engaged with spatial sociology and geography, and re-appropriated mapping and visualization tools and methodologies to give voice to marginalized communities, disempowered groups and individuals. Therefore, while acquiring a dimension of granting a voice to marginalized and disempowered groups, visualizations has also brought further complexity to the field of quantitative-driven methods of spatial analysis.

Despite D'Ignazio's critique, she highlights three important elements that feminist researchers propose in order to do meaningful visualizations: (a) the utilization of new methods to represent and visualize missing data, flawed, and aesthetically irrelevant data; (b) the identification of processes of knowledge production, and (c) the active and creative processes to give space to dissent. All three elements have been applied in building and launching the "Feminicidios Reclassification Project" for Ciudad Juarez.

## The Feminicidios Reclassification Project

The "Feminicidios Reclassification Project"<sup>5</sup> is both a database and an archive. The archival project, (a) considers the impact but, also, the limitations of search engines and computer vision, and, therefore, uses statistics and data analysis to gather evidence on the narrative about feminicidios in Ciudad Juarez, and (b) clusters the clues found online and renders them retrievable, visualizable, and statistically significant. Most importantly, the archive is based on the gathering

of meaningful *digital dust*, or the unused and forgotten digital production of data on feminicidios in the city. The archive is dependent on an object-oriented database, which helps catalogue the narrative of feminicidios in Ciudad Juarez, and feminicidios's presence and relevance in the *life* and the *space* of the city through discarded images, documents, and Internet-based newspaper articles and newsletters.

The Feminicidios Reclassification Project (FRP) is a volunteerdeveloped archive aimed at recording the issues of feminicidios in Ciudad Juarez and, more broadly, Mexico. The archive relies on a PostgreSQL database<sup>6</sup> and records a variety of objects, from academic texts that have studied feminicidios to images and tweets, some of which are short-lived and rather unpopular campaigns to denounce the political silence and police inactivity concerning the issue. My focus, in this article, concerns images from the FRP archive because I want to visualize, as well as statistically analyze, the visual narrative of feminicidios in the city, effectively asking the questions: What pictures are mostly used when talking and presenting feminicidios? What platforms have been used the most in the reporting and denouncing of feminicidios in the city? The database has been populated following the logic of search engines and the principles of computer visions. In fact, in the FRP database's current structure relies on a user-friendly interface that requires volunteers to fill using specific fields (see Figure 3) that pertain to the source of the data, the platform where the information was found and the date.

<sup>&</sup>lt;sup>5.</sup> The name was chosen following geographer Keith Yearman's Ciudad Juarez Declassification Project (Yearman, 2006).

<sup>&</sup>lt;sup>6</sup> The PostgreSQL is more reliable and, coupled with Postico, it is easy to manage, and queries are easy to launch.

Soun	ce URL:
Sour	ce Title:
Date	
Inser	t Text (if online article copy and paste content here)
	ad file (pdf., doc., mp4 and mp3)
	BROWSE Select a file from your computer
	nt Object (most salient object in picture) Body Pink Cross/es Protest or March Exhibition or Performance Other
Other	Salient object (Describe)
	pround (of picture) Desert Urban Landscape Other
Other	background (specify)
	orm:

Figure 3. Volunteers Google Form

Finally, a specific section of the input form is reserved to images contained in the particular reference, and which is divided to two parts, the 'Salient Object' and the 'Background.'<sup>7</sup> The category Salient Object asks the volunteers that fill in the form to identify the object that emerges as central in the picture they are submitting. Instead, the Background category allows for the identification of the place, or the space, where the Salient Objects are found. In this category, I ask the volunteers to inform about the surroundings or the context where they find the salient object. The structure of the input form was built around these two categories, however, as the database has, and is growing, a need has arisen to expand and increase the number of categories to include other salient objects.

The two categories so far identified under Salient Object were, originally, Body, and Pink Cross/es.<sup>8</sup> In time, however, two more categories have been added: 'Protest or March,' and 'Exhibition or Performance.' The principles of salient objects in disciplines like computer vision are associated with the detection of clues that emerge distinctly in a picture, and would presumably capture the viewer's attention (Borji, Sihite, & Itti, 2012). The four categories that are part of the database undergo continuous updating, based on the material that is shared. In 2018, in fact, a fifth category has been added titled 'Other' to add elements or categories that could further enrich the analysis. The two categories so far identified under 'Background' are: 'Urban Landscape' and 'Desert.' These two categories, contrary to Salient Objects have remained unaltered.

#### New Methods to Represent Missing Data: Digital Dust

In its current structure, the Ciudad Juarez FRP dataset consists of three connected tables: Platform, Object, and Context (see Figure 4). Much work is currently being done on salient objects in the field of computer vision and

<sup>&</sup>lt;sup>7.</sup> This concept pertains to the fields of psychology and neuroscience. Saliency is usually defined as the state of quality by which an object stands out visually; saliency depends on multiple factors from sensory to personal histories. As such, it has become the center of much computer vision efforts to serve image classification. In this specific domain, efforts have been made in modeling the mechanisms of human attention and automate them (Frintrop, Rome, & Christensen, 2010).

<sup>&</sup>lt;sup>8.</sup> These two initial categories were created based on an initial analysis of a limited corpus of 166 images.

machine learning (Borji, Sihite, & Itti, 2012; Li, Xia, & Chen, 2018). In parallel, contribution of visual research methods and visual anthropology is becoming central to current work on social media critical discourse analysis and the impact of images as new forms of communication (Rose, 2016). However, little attention has been paid to the possibility to merge the principles of computer vision and machine learning, the reflections and contributions of visual research methodologies to current image research and statistics, which, as it has been seen, can be inherently biased, seeking representation through data aggregation while sacrificing missing data.

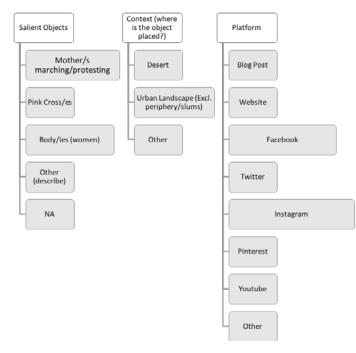


Figure 4. Structure of the database.

The Ciudad Juarez FRP is specifically created to store and curate information and data about violence and missing-ness of feminicidios in Ciudad Juarez. The database structures information in tables connected through specific keys. The database also organizes the images as well as all the documents saved on the database by topic, date and platform. FRP is a repository of information (textual as well as visual) that can be analyzed statistically, a corpus that can offer insights on the narrative, the stories and the history of feminicidios in the city.

The FRP database was motivated by the need to create an archive, or a reliable dataset that could serve the purposes of understanding the history of, and the narrative around, feminicidios and create a digital space that can be used to retrieve information, undertake statistical analysis, employ data science to understand how feminicidios have been reported, and archive the visual and textual corpus.<sup>9</sup> Most importantly, the act of gathering data and creating a database, has facilitated estimation, through logistic regression, of the visual narrative that the presence (or absence) of particular elements within the retrieved, categorized, and analyzed images build knowledge about women's murders in the city of Ciudad Juarez.

# Data Visualization of Processes of Knowledge, Alternative Discourses, and Visual Narratives of Pink Crosses

I analyzed a corpus of 2,000 images to interpret visual narratives of feminicidios in Ciudad Juarez. Through the organization of the 'scattered data' into a finite corpus of data points ready to be aggregated and analyzed, the images that appeared in articles, blog posts, or social media platforms have been processed and visualized, acquiring an unprecedented statistical significance. The images retain their important visual impact, as discussed in this section, but they also form a digital corpus that has been ordered and structured to allow descriptive statistical analysis, thus entering the realm of *objectivity* and *scientificity* that it lacked. The images have been assigned an ID and the details on Salient Objects and Background turned into "logical variables" (True or False). It has then been possible to undertake correlation analysis as well as logistic regression. Correlation analysis has allowed me to understand the relation between the Salient Objects and the Background, but, also, understand the outlets (the 'Platforms'), where certain salient objects appear the most. In the sections that follow, I explain the results of the correlation analysis of images undertaken between June 2016 and November 2017.

<sup>&</sup>lt;sup>9</sup> Although, at the moment, the database has to be accessed using Query functions, I am working to create a platform that can be accessed by researchers and activists, who wish to explore the data and retrieve the information.

#### **Pink Crosses**

Pink crosses become the salient objects that acquire prominence over other listed objects. The images saved on the database have become logical variable (TRUE or FALSE), and this has allowed for correlation analysis and logistic regression to be undertaken in order to understand, to date, what narrative the images found, retrieved and saved from the dust of the digital realm have told and continue to tell. The statistical analysis has highlighted that there is a high correlation (67.7%, n = 2000) between the salient object 'Pink Crosses' and the context 'Protests and Exhibitions;' the analysis has in fact showed that pink crosses appear in pictures taken during street protests against the lack of justice or as parts of exhibitions and days of remembrance. In terms of their context, or where the pink crosses have mostly been placed by the volunteers that contribute to the database, they appear to be equally relevant and visible in the desert (21.3%)but have become, predominantly, part of the urban landscapes (54.1%) (see Table 1). These findings themselves do not tell a new story to the activists and the researchers. The database, however, becomes an archive and a guide to the narrative of the city, place and space, victim and stage of violence, abandonment and bordering. Most importantly, the database allows to combine categories and variables that can be employed, associated, organized, and re-organized in a productive and comprehensive manner.

The hard data further corroborates the intrinsic value of pink crosses as symbol of signposting, remembering feminicidios in the city while also resisting the forgetfulness the tragedy has met and continues to meet. The translation of salient objects and digital dust into meaningful and quantifiable clues oppose a politics of missing-ness while also proposing one of remembrance. Activists have used pink crosses to keep the memory of the forgotten and unquantifiable victims of violent and brutal murder in the city, and demand justice. In other instances, pink crosses have been painted or carried to demonstrate against the political choice to ignore the issue. The most recent case, one that has briefly received international attention, is the activism of mothers and allies painting black crosses on a pink background on every single light pole from the International Airport of Ciudad Juarez to the women-only prison CeReSo No. 3, on occasion of the Papal visit in February 2016. For an example, see Figure 5. These crosses, later removed, were painted to invite the Pope to openly accuse the city of Juarez of the political silence surrounding the issue of feminicidios.



Figure 5. Mother painting pink and black crosses during the Papal visit to Ciudad Juarez in February 2016.

The traces of pink crosses, which are traces of feminicidios, are in fact engrained in the public space of the city not only through the many protests and petitions organized over the years but also through graffiti and posters. Pink crosses have been used to signpost the places where mass graves have been found and a large cross on a pink background has become a permanent presence at the Santa Fe Bridge, one of the main bridges that divides the city from the United States of America (see Figure 6). Feminicidios, and the burden of women's violent murders, are also becoming part of public spaces and the city as a whole through graffiti, which is also documented in the FRP database. Over the years, locals have become accustomed to black and white pictures of women hanging on main streets and avenues. These either denounce the disappearances and the political and institutional silence, or alert on a missing girl and share the picture and other details. In early 2017, local artists embarked in a project to counter the politics of missing-ness and silence with graffiti of over 180 women's faces in the location, Praderas de Los Oasis (Coronado, 2015).



Figure 6. The cross on Santa Fe Bridge to remember the murdered women of Ciudad Juarez

The images of activists marching with pink crosses painted on their faces, the commemorative graffiti on the streets of Juarez, and the pink crosses of Campo Algodonero (an abandoned cotton field where eight bodies were first found in the early 21<sup>st</sup> century (Sentencia de la Corte Interamericana de Derechos Humanos, 2010). Pink crosses have contributed to create an imagery of feminicidios in the city. All these images, which again constitute the FRP database, have appeared across multiple platforms consistently throughout the years, especially the pink crosses which, among other objects such as red shoes, have been used in activist organized theatre performances aimed at petitioning local and federal authorities to tackle the issue or raise awareness on the issue of the violent murders of women. In both cases, these campaigns challenged and openly attempted to debunk the myth of these murders being a 'family' issue and, thus, attributable to the sphere of domestic violence.

Therefore, the images propose new discourses, an alternative narrative of feminicidios that reasserts the reality and the painful roots of this specific issue

in the ways in which the space is lived and experienced. The database, and the images specifically, propose a visual narrative, a visual reality of what it means to live with feminicidios and that resists forgetfulness. The database itself becomes an alternative form of knowledge that recombines the digital dust, those clues left online by isolated activists or organizations, and makes them relevant, accessible, and easy to aggregate and cross-validate.

# Conclusion: Data Visualization of Digital Dust as Feminist Activism

The Feminicidios Reclassification Project has combined statistical and visual evidence and data-led truths. The database and the archival function associated with the database combine the visual narrative of the digital images and the context within which these have appeared and gathers digital dust, rendering it relevant and, most importantly, visible. The physical traces in the city and the traces that can be found online reinforce the determination of organizations and families to be led down the path of the politics of silence and abandonment that Ciudad Juarez has seen for more than two decades. The activist images of pink crosses have remained scattered online, but can be aggregated by search engines as clues and evidence that feminicidios has plagued the city of Ciudad Juarez. Feminicidios is statistically relevant, it is contextualized and the numbers are not only about the missing or murdered bodies but is comprised of the activist efforts to oppose the silence, the politics of abandonment and bordering. The database serves the purposes of archiving the text associated with the images, give space to the images' narrative and store the links that could become lost or misplaced. It is motivated by some of the core elements of feminist research, or the valorization of marginalized and forgotten information. Following D'Ignazio's (2015) reflection on how feminist theories and methods could contribute to data visualization, my intention, in this article, is to open the doors to feminist data studies. In the application of core principles of feminist theory and epistemology, the aim is to formulate an inclusive methodology and an active (and possibly activist) mode of researching what appears to be invisible and neglected. Moreover, I advocate the use of statistical evidence from digital dust to counter a narrative of statistical insignificance and missing-ness.<sup>10</sup>

<sup>&</sup>lt;sup>10.</sup> Please contact the author if you would like have access to the data. It continuously grows as new new data points are added.

#### References

- Andreas, P., & Greenhill, K. M. (Eds.). (2010). *Sex, drugs, and body counts: The politics of numbers in global crime and conflict*. Ithaca: Cornell University Press.
- Bernardi, C. L. (2017, June 15). George Simmel, Benjamin and the politics of missingness. (R. Leck, Interviewer)
- Bernardi, C. L. (2017). Harassmap: The silent revolution for women's rights in Egypt. In E. Maestri, & A. Profanter (Eds.), *Arab Women in Changing Landscapes* (pp. 215-227). Cham, Switzerland: Palgrave Macmillan.
- Borji, A., Sihite, D. N., & Itti, L. (2012). Salient object detection: A benchmark. *ECCV 2012: Computer Vision – ECCV 2012* (pp. 414-429). Amsterdam: European Conference on Computer Vision.
- Bowden, C. (1998). Juarez: The laboratory of the future. New York, NY: Aperture.
- Castillo, R. (2015, June 22). Murdered in Mexico State: The silent epidemic of women killings in Mexico. Retrieved from Vice News: <u>https://news.vice.</u> <u>com/article/murdered-in-mexico-state-the-silent-epidemic-of-women-killings-in-mexico</u>
- Comision Nacional para prevenir y erradicar la violencia contra las mujeres. (2016, April 15). *Sabes que el protocolo alba*? Retrieved from gob.mx: <u>https://www.gob.mx/conavim/acciones-y-programas/sabes-que-es-el-protocolo-alba</u>
- Coronado, M. (2015, April 28). *Plasman en murales los 180 rostros del feminicidio*. Retrieved from El Diario Mx: <u>http://diario.mx/Local/2015-04-28\_1c187993/plasman-en-murales-los-180-rostros-del-feminicidio/#</u>
- Denis, A. (2008). Review essay: Intersectional analysis. A contribution of feminism to sociology. *International Sociology*, 23(5), 677-694.
- D'Ignazio, C. (2015, December 20). *MIT Center for Civic Media*. Retrieved from MIT: <u>https://civic.mit.edu/feminist-data-visualization</u>
- D'Ignazio, C., & Klein, L. F. (2016). Feminist Data Visualization. *IEEE VIS Conference on Digital Humanities - Workshop on Visualization for the Digital Humanities.* Baltimore: IEEE.
- Eco, U., & Sebeok, T. (1984). Morelli, Freud, and Sherlock Holmes: Clues and scientific method. In U. Eco & T. Sebeok (Eds.), *The sign of three: Dupin, Holmes, Peirce* (pp. 81-118). Bloomington, IN: Indiana University Press.
- Flores, N. M. (2011, March 31). *The pink cross: Resisting femicides in Ciudad Juarez*. Retrieved from *Theological Conversations in the Church & World* at <u>https://nicholemflores.com/2011/03/31/the</u>-pink-cross-resisting-feminicide-in-ciudad-juarez/

Foucault, M. (1988). Technologies of the self. In H. M. Luther, G. Huck, H. H.

Patrick, H. M. Luther, G. Huck & H. H. Patrick (Eds.), *Technologies of the self: A seminar with Michel Foucault* (pp. 16-49). Amherst, MA: The University of Massachusetts Press.

- Frintrop, S., Rome, E., & Christensen, H. I. (2010). Computational visual attention systems and their cognitive foundations: A survey. ACM Transactions on Applied Perception (TAP) (pp. 1-46). New York, NY: ACM.
- Haraway, D. (1988, Autumn). Situated knowledges: The Science question in feminism and the privilege of partial perspective. *Feminist Studies*, 14(3), 575-599.
- Herrera, S., Farrera, L., Muixi, L., Siera, D., & Xavier, G. (2010). *Materials of peace and human rights, 18*. Barcelona: The Government of Catalonia Ministry of Home Affairs, Institutional Relations and Participation Office for the Promotion of Peace and Human Rights.
- Herrera-Robles, J. (2009). *Ciudad Juares: Malgoverno y politica del abandono.* Ciudad Juarez, Mexico: Ciudad Juarez University Press.
- Hidehiko, K., Kinoshita, M., & Murakami, I. (2002). Neural responses in the primary visual cortex of the monkey during perceptual filling-in at the blind spot. *Neuroscience Research*, *44*(3), 231-236.
- Hill, R. L., Kennedy, H., & Gerrard, Y. (2016). Visualizing junk. *Journal of Communication Inquiry*, 40(4), 331-350.
- Hooks, C. (2014, January 9). *Q&A with Molly Molloy: The story of the Juarez Feminicidios is a "Myth"*. Retrieved from *Texas Observer* at <u>https://www.texasobserver.org/qa-molly-molloy-story-juarez-femicides-myth/</u>
- Huges, C., & Cohen, R. L. (2010). Feminists really do count:the complexity of feminist methodologies. *International Journal of Social Research Methodology*, 13(3), 189-196.
- Li, J., Xia, C., & Chen, X. (2018). A benchmark dataset and saliency-guided stacked autoencoders for video-based salient object detection. *IEEE Transactions on Image Processing*, *27*(1), 349 364.
- Lury, C. (2014, December 11). *Double blind, double bind: The plane that disappeared*. Retrieved from University of Sheffield Youtube Channel at <u>https://www.youtube.com/watch?v=-\_\_2AAIdkzI</u>
- Manovich, L. (2014, June). SelfieSaoPaulo; a new project by Moritz Stefaner, Jay Chow and Lev Manovich for a media facade in Sao Paolo. Software Studies Initiative, New York.

Mayer-Schönberger, V., & Cuckier, K. (2013). *Big data: A revolution that will transform how we live, work, and think.* London: John Murray Publishers.

Mele, V. (2011). Metropolis, Simmel e la modernita'. Livorno, IT: Belforte

Salomone.

- Pantaleo, K. (2010). Gendered violence: An analysis of the maquilladoras murders. *International Criminal Justice Review, 20*(4), 349-365.
- Parikka, J. (2015). *Geology of media*. Minneapolis, MN: University of Minnesota Press.
- Pavloskaya, M., & St. Martin, K. (2007). Feminism and geographic information systems: From a missing object to a mapping subject. *Geography Compass, 1*(3), 583-606.
- Peck, R., Olsen, C., & Devore, J. (2009). *Introduction to statistics and data analysis*. Belmont, CA: Brooks/Cole CENGAGE Learning.
- Pineda-Madrid, N. (2011). *Suffering and salvation in Ciudad Juarez*. Minneapolis, MN: Fortress Press.
- Polit, D. F., & Tatano Beck, C. (2012). Nursing research. Generating and assessing evidence for nursing practice. Philadelphia, PA: thePoint.
- Rolin, K. (2009). Standpoint theory as a methodology for the study of power relations. *Hypatia*, 24(4), 218-226.
- Rose, G. (2016). Visual methodologies (4th ed.). London: SAGE.
- Scott, J. (2010). Quantitative methods and gender inequalities. *International Journal of Social Research Methodology*, *13*(3), 223-236.
- Sentencia de la Corte Interamericana de Derechos Humanos. (2010, May). *Mujerez Usando el derecho como una herramienta de cambio*. Retrieved from 30 Cladem: <u>https://www.cladem.org/es/espanol/64-que-hacemos/estrategias-</u> <u>de-accion/litigio/litigios-internacionales/litigios-internacionales-oea/174-</u> <u>caso-campo-algodonero-mexico-femicidio-feminicidio</u>
- Serres, M., & Latour, B. (1995). *Conversations on science, culture, and time*. Ann Arbor, MI: University of Michigan Press.
- Swenson, K. (2017, July 10). Hundreds of women disappear in Ciudad Juárez each year. A smartphone app could help. The Washington Post. Retrieved from https://www.washingtonpost.com/news/morning-mix/wp/2017/07/10/ hundreds-of-women-disappear-in-ciudad-juarez-each-year-a-smartphone-app-could-help/?noredirect=on&utm\_term=.878479a9255e
- Tuan, Y. F. (1979). Space and place: Humanistic Perspective. In S. Gale & G. Olsson (Eds.), *Philosphy in Geography* (pp. 387-427). London: D. Reidel Publishing.
- Tuana, N. (2006). The spectrum of ignorance: The women's health movement and epistemologies of ignorange. *Hypatia*, 21(3), 1-19.
- Tufte, E. R. (2001). *The visual display of quantitative information*. Cheshire, CT: Graphic Press.
- Urla, J. (1993). Cultural politics in an age of statistics: Numbers, nations and the

making of Basque identity. American Ethnologist, 20(4), 818-843.

- von Lünen, A., & Le Roy Ladurie, E. (2013). Immobile history: An interview with Emmanuel Le Roy Ladurie. In A. von Lünen & A. von Lünen (Eds.), *History and GIS: Epistemologies, considerations and reflections* (pp. 15-25). Dordrecht: Springer Netherlands.
- Washington, D. (2006). *Harvest of women. Safari in Mexico (1993-2005)*. Burbank, CA: Peace at the Border.

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