Title: Feminist Periscoping & Feminist Data Visualization: Strategies for Analyzing and Disseminating Messy Data

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Abstract:

In this paper, we build on feminist geographical methodological innovations that link theories about data transparency and multiplicity with praxis, suggesting how feminist methods can better reflect the messiness of data. We argue that two interrelated strategies, feminist periscoping and feminist visualization, can highlight the strengths across messy data sets while also being transparent about the gaps within the data. We illustrate this argument using two examples from research into public information campaigns developed to dissuade unauthorized migration to the US and Australia. Taken together, we argue, feminist periscoping and feminist visualization approaches are an effective way of analyzing and disseminating messy data.

Keywords: feminist, periscoping, visualization, mixed methods, messy data

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Figure captions:
Figure 1. Saturation of "I know Illegal Smuggling is Wrong" campaign, Pasir Baru, Java, 2010

Figure 2. Global Distribution of Public Information Campaigns, 2023. Hover over an individual country to see an example of a campaign that was distributed there. A full list of campaigns identified can be found HERE. A full list of sources used to create this visualization can be found HERE.

Figure 3. Example of text displayed for each entry in Global Distribution Map, 2023.

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# Introduction

Geographers have access to more data than ever before, yet more data does not always mean more consistent, well-organized, or complete data. Within border enforcement and migration studies, data that is inaccessible and inconsistent is the rule, rather than the exception (Belcher & Martin, 2013; Maillet et al., 2017). In our comparative study of public information campaigns developed to dissuade unauthorized migration to the US and Australia, we used a feminist geographical lens to better understand how migration deterrence efforts employ narratives of race, gender, and nationality to affect potential migrants' emotional and affective responses to leaving their countries of origin. These deterrence campaigns target migrants in intimate everyday settings, from their family days out to their social media feeds, and represent increasingly common forms of deterrence and border enforcement. Within this project, we collected a great deal of data, but given state efforts to conceal these projects, that data was messy. Messy data, for us, captured the challenging qualities of this dataset we: data was patchy and incomplete, and sometimes intentionally contradictory. Together, these characteristics are what we term 'messy' data throughout this paper. In what follows, we contribute to feminist geographers' attempts to put methodological approaches into practice by summarizing two strategies which were effective at analyzing and disseminating our messy data: feminist periscoping and feminist visualization. We illustrate this argument using two examples: in the first example, a collage visualization strategy aims to communicate how small communities are disproportionately targeted with campaign messaging. In the second example, gaps in wider datasets prompt an effort to create a participatory platform for data-sharing.

## Project context

This paper draws on data collected as part of a collaborative study of public information campaigns (PICs) aimed to reducing unauthorized migration funded by the US and Australia between 1990 and 2018 (National Science Foundation Award 1853652). Unlike border enforcement strategies that focus on militarization and criminalization, PICs rely on emotional and affective messaging to persuade would-be migrants to stay at home (Williams, 2020). Campaigns have been used by countries of the Global North since the 1990s, and have spread to a wide variety of contexts, including northern Africa (Brachet, 2016), Sub-Saharan Africa (Frowd, 2018), and Indonesia (Hirsch & Doig, 2018). While PICs are often framed through a humanitarian lens as raising awareness for migrants, they also serve to normalize increasingly violent border enforcement practices (Kaneti & Assis, 2016; Musarò, 2019). Studies have shown that these campaigns are effective at reaching target audiences, but their ability to impact migrants' decision-making is low (Browne, 2015; Heidbrink, 2020; van Bemmel, 2020).

Our research team collected over 1,000 files across the two national contexts, which included campaign materials (print, video, audio), governmental documents related to PICs, media articles, and evaluation and other documents produced by contractors hired to produce campaigns (many obtained through Freedom of Information Requests [FOIs]). We collected data through publicly available websites on campaigns, archived campaign websites, government databases, government archives, online collections of historical media reports, publicly-available FoI requests from past filers, our FoI requests, social media websites, government contract databases, online parliamentary and congressional records, and other sources. Not all data

emerges from internet search terms, but all data was publicly available online. We conducted key informant interviews to answer questions that emerged. Analysis of this data has helped us better understand the role of gender and the family in constructing these campaigns (Coddington and Williams, 2022), the use of intimate, affective messaging to target migrants (Williams and Coddington, 2023a), and how affective messaging relies on transnational circuits to form tenuous, yet powerful connections allowing campaigns to operate at scale (Williams and Coddington, 2023b). The examples highlighted in this paper draw specifically on data from one Australian campaign sourced mainly from FoI requests (Example 1) and a wider literature review conducted about the prevalence of PICs around the globe (Example 2). In the sections that follow, we describe the two strategies we used to effectively communicate findings from our datasets: feminist periscoping and feminist visualization.

## Conceptual approaches

### Feminist periscoping

Data about border enforcement is notoriously difficult to access (Bosma et al., 2020; Côté-Boucher et al., 2014); indeed, Belcher and Martin (2013) conclude that US data about border enforcement is harder to access than data about military operations. Conlon and Hiemstra (2021) describe the challenges of using FoI requests to obtain data on immigrant detention, including delays and redactions. In response, we adopted feminist periscoping to conduct research within these conditions. Feminist periscoping "aims to reveal systems, processes, and experiences typically out of view that have previously been left uninterrogated due to lack of access or awareness" (Hiemstra, 2017, p. 332). Similar to practices of data triangulation that

synthesizes multiple types of data, periscoping involves synthesis across gaps in data through combining methods and approaches. Just as a periscope combines mirrors and angles to illustrate something out-of-sight, periscoping assembles a variety of lenses to acquire a coherent picture of a process or practice.

While the different approaches to collecting data enabled by the periscope may be similar to well-known methods in social sciences such as content analysis, ethnographic observation, or semi-structured interviewing, periscoping is based on feminist epistemological perspectives that assess objectivity, rigor, and truth differently from the scientific method. Periscoping builds on feminist principles of knowledge production: it embraces the notion of partial, situated knowledge (Haraway, 1988) and uses situated perspectives to bridge gaps (see e.g. Rose, 1997). Feminist periscoping rejects assumptions that rigorous data is obtained through the objective researcher's ability to "get in" to places, relationships, or sites that are challenging to access (Williams and Coddington, 2021). Indeed, feminist periscoping does not promise to fully reveal the object of study – but what it purposefully shows, instead, are the lenses needed to visualize the data (Hiemstra, 2017; Williams and Coddington, 2021).

Increasingly, scholars are taking inspiration from Hiemstra's (2017) methods to address a variety of topics. For Beban and Schoenberger (2019, p. 79), periscoping is primarily "an orientation towards overcoming intentional obscurity" that combines multiple methods that do not depend on constant transparency and continuous access. Similarly, Slack and Martinez (2021) use periscoping to navigate the deportation process where states restrict access to information.

Legal scholars Leslie et al. (2023) describe how periscoping, as a "form of mixed methodology that specifically seeks to explore obscured state practices" can be used from a public law perspective to deal with government secrecy. Other scholars have drawn conceptually from the feminist theoretical foundations of periscoping, such as Coen (2021) who employs periscoping to reframe conventional understandings of 'rigor' and 'validity' and Pascucci (2019) who uses periscoping to frame the knowledges accessible from an insider-outsider researcher perspective.

In this project, periscoping provided both a conceptual and practical orientation to research. Conceptually, periscoping is distinct from other forms of triangulation because it emphasizes the multiple perspectives needed to illuminate aspects of the project that were intentionally obscured from view. In doing so, there is both a recognition of the barriers to access and the impossibility of having a 'complete' picture, while also assembling a collage which can be more than the sum of its parts. For instance, in this project, sometimes FoI requests produced volumes of email correspondence. While these were not available in other cases, having other types of data allowed us to understand that there existed similar complex relationships between government and contract staff, despite not having the documents to 'prove' it. This is fundamentally a different understanding of rigor, in a context where data is deliberately obscured, records are destroyed through frequent reshuffling of agencies, and responses to FoI requests are delayed over years. Nevertheless, the partial perspective assembled through this application of the periscope reveals certain 'truths' about the production of campaigns.

Sometimes, as we explore below, visualizations can capture some of these conclusions in ways that other forms of data analysis cannot.

The other important way we used the periscope was practical: periscoping is about the process of encountering intentionally obscured data. Illuminating the search for data also makes visible other concealed practices and relationships, and "foregrounds the constraints to access" (Williams and Coddington, 2021, p. 146). This can be understood as a relational interpretation of secrecy, that "what becomes important to understand about the secret is less its hiding per se, and more the way in which it structures social relations, regulates communication, and distributes political power" (Bosma et al., 2020, p. 10). Collecting data through FoI requests, for instance, meant exploring how lengthy delays, sizable cost estimates, and redactions shape the way immigration control practices can be understood. Synthesizing financial data across government agencies, meanwhile, revealed how agency name changes and sharing responsibility across different agencies obscures the scope of these projects. Using the periscope to understand these methods of obfuscation also inspired us to explore how visualizations can integrate research findings across contexts and contest concealment strategies.

## Feminist visualization

While feminist periscoping guided our research approach, feminist visualization offered conceptual and practical insights for sharing our findings. Feminist approaches to data visualization have emerged from a rich interdisciplinary field. Scholars in science and technology

studies questioned the situated nature of knowledge and critiqued assumptions about objectivity and neutrality of science (Haraway, 1988). Further work in this field has deconstructed assumptions about embodiment and knowledge production (e.g. Bennett, 2009). These insights highlight the role of partial perspectives, of acknowledging positionality, and of the central role of bodies in visualization projects such as body mapping or participatory mapping projects.

In turn, we follow Kelly (2019) and D'Ignazio and Klein (2020) and consider *feminist* visualization to be work that draws on feminist epistemologies and ontologies to specifically and intentionally engage in visualization practices in a way that integrates context, subjectivity, multiple perspectives, and power. Rather than static representations of a fixed reality, feminist visualizations specifically illustrate the complex and subjective way in which social and geographic processes exist and are made known through visual representations. Feminist visualizations thus echo critiques raised by Schuurman and Pratt (2002, pp. 297–298) to understand how visualization technologies, such as GIS, are themselves "systems of knowledge" that enable certain kinds of truths. Considering all aspects of the project from the data (how it was collected, whose voices are included) to the process of making the visualization (what are considered to be data points, how power relations are represented) and the outcome of the visualization (the potential for empowerment of target audiences, the response from audiences, and its iterative impact on the visualization itself), D'Ignazio and Klein (2020) argue that "feminist" knowledge production can emerge from every point, or any point.

Feminist geographers in particular have critically considered the potential of GIS for feminist data analysis (e.g. Kwan & Knigge, 2006; Schuurman & Pratt, 2002) and more broadly explored explicitly feminist ways to map data. For instance, Whitesell and Faria (2020) use GIS to map the Ugandan wedding industry across scales, arguing that "global intimate mapping" highlights the individual accounts of participants that challenge the binaries of 'global' and 'local' knowledge production. Feminist geographers have also incorporated insights from critical cartography, which has pushed geographers to consider decolonial and activist cartographic critique (Lucchesi, 2019; Maharawal & McElroy, 2018). Meanwhile, scholarship in digital humanities has illuminated practices of visualization that align with feminist praxis (Garcia et al., 2020; Kienle, 2019). For instance, Wiens and coauthors (2020) have developed two methods of data analysis in their qCollaborative feminist design research lab, one that "forces connections" and one that "dwells with embodied data."

In this project, we've brought together feminist visualization and periscoping in both conceptual and very practical ways. Both are grounded in feminist epistemological approaches that replace reliance on objectivity and neutrality through prioritizing situated knowledges, partial perspectives, and attention to context. Both approach the notion of 'rigor' differently than conventional scientific research: rigor in both approaches is more about combining and acknowledging multiple perspectives than proving one truth. As Staeheli and Lawson (1995, p. 329) describe, in feminist research, "rigor and objectivity come from connecting the contextualized and partial knowledges that we all produce." Conceptually, however, integrating data collected through a periscoping approach with feminist visualization allows us to

emphasize process over product, both in terms of research and the campaigns we study. Visualizations bring to life our own process of understanding the campaigns through periscoping perspectives – for instance, in the examples below, multiple data sources are combined in the visualizations. The overlapping words, images, and campaign evaluation feedback in the first example represent the multiple approaches we ourselves used to collect this data and can be interpreted visually in the product we produced. Meanwhile, visualizations highlight that the research itself is about the process of connection and collaboration across different contexts: for instance, our second example represents research on campaigns from around the globe and makes contributions to knowledge production explicit and transparent.

Integrating visualizations with periscoping also involves making the deliberate obfuscations of data visible as well: to visualize gaps, absences, and barriers to data transparency is to reorient the perspective of the audience back to the periscope itself. The second example below illustrates the challenges of data collection and the barriers to accessing data: there is so little data about campaigns across the world that when we began this project, for instance, we didn't know which countries were producing and distributing campaigns. Despite a flurry of recent research on campaigns, this key piece of data is still unclear – a participatory data collection effort and updated visualization can clearly illustrate where these gaps still exist. Below, we illustrate the potential of visualizations for periscoping research with two examples from the campaigns we studied, highlighting both the conceptual and practical potential of visualizations in geographical research in secretive, inaccessible contexts.

## Example 1: Saturation: Everyday and intimate deterrence messaging

This example draws from a large dataset from an Australian-funded campaign administered by the International Organization for Migration called “I know illegal smuggling is wrong.” This piece of the campaign involved a 12-week effort in 2010 to target 13 Indonesian fishing villages where asylum seekers would depart from. The campaign featured public gatherings, targeted sermons, branded products, posters and television advertisements, and recruitment of local leaders as influencers. The data was detailed, yet also patchy and sometimes redacted from FoI requests. We wanted to convey how the everyday lives of people in these small villages were targeted by these efforts, what we refer to here as ‘saturation.’ This term captured how villagers in very small areas would encounter multiple elements of the campaign in a short period of time in intimate ways. For instance, one of the elements of the campaign-sponsored Family Fisherman Days was taking a family picture which was watermarked with the campaign logo. Families would keep the picture as it was an opportunity to have a framed family portrait, but in so doing they also plastered the campaign logo on their wall indefinitely.

<<Figure 1 about here>

The map in Figure 1 attempts to convey the intensity of this targeted campaign. This is a depiction of one village targeted by this campaign, Pasir Baru, on the southern coast of Java. Different campaign strategies are mapped on this area, with reports about Pasir Baru’s residents’ responses described in the text. For instance, the radio advertisement stated: “You are right, earning money that is not halal will mean we are living a life of sin and I do not want that.” The map uses a collage technique developed by cartographer Annita Lucchesi, where photos, text, and location information are layered through collage to convey the density of lived

experience (Lucchesi, 2019). On the right side of the map Pasir Baru is located in relation to the island of Java, and to the Australian territory of Christmas Island, where boats most often attempt to land. The map shows how intensively the campaign targeted residents: 81 out of every 100 residents were reached by advertising efforts. The goals were to convey the very small scale of the area with some of its local characteristics in conjunction with the granular level of detail of how the campaign targeted people's everyday lives.

The feminist aspects of the visualization derive from its focus on the affective and emotional experience of saturation. The map tries to convey the density and intensity of campaign efforts visually, using layers to indicate the different ways in which peoples' lives were filled by campaign efforts during this short period of advertising. Secondly, the map attends to context: here, it's important to understand how small an area was being targeted by these efforts, and how the campaign extended itself intimately into the everyday lives of its target audience, a demonstration of how the intersectional characteristics of potential migrants (their gender, age, religion, etc.) are deeply intertwined with enforcement efforts. The example of Pasir Baru also visually represents some aspects of the periscoping project. The map takes a collage form in part to make visible the different types of data available: some written feedback, some visual images of campaign products, some understanding of space and scale where the tiny target audience needs to be contextualized within the larger scope of Australian border enforcement. Yet the overlapping types of data are not clear and easily interpreted; instead, they are jumbled on top of one another, highlighting the partiality and incomplete nature of each type of data. The map, in the context of the wider project, also highlights the gaps in data collection and

knowledge we have about these campaigns: by turning to a particularly rich and comprehensive segment of our data set we are able to illustrate a wider trend present across campaigns, which was to intensely target a small geographic area with disproportionate resources. Yet while other campaigns followed similar dissemination strategies we lack the data to 'show' this trend occurring across multiple contexts – a gap in the data based on what was released through FoI requests. This in-depth portrayal of one village can also be situated within the context of obfuscated data elsewhere.

## Example 2: Making Gaps Visible and Sharing Knowledge

Partiality is a central feminist tenant upon which feminist periscoping and visualization are founded. Rather than a 'god's eye view' from nowhere, feminist scholars approach research praxis and knowledge production as inherently situated and partial. As data proliferates globally, making visible the limitations of data sets is increasingly important.

We realized there was a gap in researchers' understanding of the use of PICs across the globe – many scholars, like us, had done research in a specific geographic context, but there was little information about the scope and scale of campaigns and their global growth. Having this information would allow us to understand how PICs, like physical border fortification efforts and external interdiction, are a global phenomenon. In response, we conducted an extensive literature review of academic research, non-governmental publications, governmental publications, and media reports to create a database of known PICs. We then used this database to create a map using the free version of Tableau. Figure 2 documents where PICs

have been distributed and provides campaign names, descriptions, timeframes, and the source of the information.

In Figures 2 and 3, viewers can see where current research shows the locations where PICs have been distributed, as well as the places that remain either understudied or where PICs are not in use. This visualization shows the unevenness of research on PICs, but also evolves with updated research findings over time. Accompanying the map is a participatory data-sharing portal, where researchers can submit their work to be included on future iterations of the map. When viewers click on the shaded areas of the map, a text box provides viewers with direct access to the data set used to create the visualization. Viewers also have access to an annotated bibliography that includes all of the sources where information was gathered to create the visualization. Aimed at researchers who study PICs, this map not only visualizes the global use of PICs, but also the gaps in our understanding of these campaigns and importantly, where these gaps are located. Linking findings about PICs across disciplinary and institutional boundaries, this map is meant to encourage collaborative thinking about the spread and development of PICs, and encourage relationships amongst the people who study them.

<<Figure 2 about here>>

This example also highlights some elements of periscoping: situating the map within a wider context, its production was inspired because of the lack of data about PICs across national contexts. Mapping this data visually highlighted the gaps in the data. Opening up the continued production of the map through our project website is a way of sharing both the barriers to knowledge production created through government secrecy about these campaigns as well as

combining partial perspectives to produce a constantly evolving representation of collective knowledge of PICs.

<<Figure 3 about here>>

By providing viewers/users with direct access to where information was obtained and opening the map to collaborative data entry, we hope to make visible the complicated and incomplete process of data collection and database creation and to prompt continued knowledge production by providing others with information needed to explore the geography of PICs.

## Conclusion

We have argued that combining feminist periscoping and feminist visualization approaches is an effective way of analyzing and disseminating messy data, such as in the realm of public information deterrence campaigns. We provide two examples from campaigns to illustrate the potential of these approaches: in the first example, different datasets are collaged together to illustrate what we analyze as the phenomenon of saturation, or messaging that intensely targets small community residents' everyday lives. This example illustrates the emotional sensation of being targeted in such a way, as well as the incomplete and partial data the project was able to gather based on government secrecy. Understood in the context of the wider scope of the research project, this visualization also serves as a reminder of the type of data that exists for *each* of these information campaigns, but is mostly unavailable for researcher access. The second example also uses visualization strategies to communicate gaps in data and knowledge about information campaigns globally: conceptually, the periscoping method shows both the

barriers to access as well as the patchy data available; practically, this map does the same. Viewers can see how data about campaigns has evolved as well as the gaps in knowledge, but the participatory datasharing portal allows viewers to actively engage in making future iterations of the map through sharing research findings. These visualizations suggest how feminist periscoping provides a conceptual and methodological frame capable of advancing efforts to identify patterns and insights even when data is far from simple or coherent, and visualization strategies can be used in combination with these efforts to effectively disseminate information. These strategies are particularly useful for feminist border enforcement researchers, who are attending to how enforcement efforts increasingly operate across multiple scales, from the embodied and intimate family scale of a framed family picture to the scale of geopolitical deterrence narratives, as well as how enforcement efforts are shaped by migrants gender, race, nationality and other aspects of identity. Furthermore, these tactics help feminist researchers construct *visual* responses to visual enforcement tactics, providing alternative modes of research dissemination that can potentially connect differently with audiences, raising awareness amongst those who are not so specifically targeted by such enforcement efforts of their intimate, emotional strategies.

Taken collectively, three key aspects of feminist periscoping and visualization bolster our confidence in these approaches for researchers grappling with messy data. First, research is as much about the process as the product. While our research outputs may take 'traditional' forms—e.g., standard-looking maps, academic publications—the process for getting from data collection to output can be rigorously feminist by, for example, integrating continuous processes

of self-reflection. A focus on feminist epistemological principles – reflexivity, situated positioning, partial knowledge, and the relationality of knowledge production – will encourage continued innovation in feminist methods, a trend that impacts the production of feminist knowledge inter- and trans-disciplinarily, as Hughes and Cohen (2010) note.

Second, these feminist approaches encourage us to make gaps visible rather than hide them for the gaps often provide insights on where power resides and how it operates. And finally, both feminist periscoping and visualization work to provide transparency within research by providing pathways for advancing our efforts to understand and represent the world that do not require technical skills or fancy software. Rather, periscoping provides a way forward for researchers who are committed to understanding systems of power even when those systems are intentionally obscured by allowing us to piece together data and working iteratively to develop insights. Feminist visualization encourages us to be willing to think creatively, critically, and, often times, collaboratively.

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