

Mapping migration detention: Mixed methods, grounded theory, transdisciplinary encounters

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ARTICLE INFO

Keywords:

Mixed methods
Grounded theory
Counter-mapping
Visual data
Immigration detention
Carceral geography
Subjectivation
Mental health
Joint display
Critical cartography

ABSTRACT

The more difficult it is to access a research field, the more substantial the need to develop creative methodological models. Investigating the psychosocial impact of migration-related carceral spaces constitutes one such research field. To shed light on these spaces and counter the challenges of opacity, harm, and power asymmetries, we propose a psycho-geographical counter-mapping as a mixed methods approach based on grounded theory (MM-GT). Applying it to immigration detention and refugee confinement sites in Mexico and Samos, our analysis proposes a fully integrated and sequential design that can be adapted to a range of carceral spaces and subjectivation in transdisciplinary research.

Special Issue “Advancing Methodological Boundaries by Innovation in the Pairing of Mixed Methods with Qualitative Methods”

Editors: Dr Elizabeth G. Creamer & Dr David Reeping

1. Introduction

The more difficult it is for researchers to access a research field, the more substantial is the need to develop creative methodological models (Creamer, 2021). Migration-related sites of confinement constitute one such research field; researchers face additional challenges when it comes to investigating the psychosocial impact of these confinement sites. Within transnational migration regimes, multiple forms of immigration detention have become a global norm (Flynn & Global Detention Project, 2014). Migration-related carceral spaces are institutions where people on the move are held “without their consent” (Martin and Mitchelson, 2009, p. 459), such as detention centres, hotspots, and refugee camps. Despite the *administrative* nature of these carceral spaces, these institutions of confinement closely resemble *penal* sites of

imprisonment (Bosworth and Turnbull, 2015; Martin and Mitchelson, 2009; Silverman and Nethery, 2015). The administrative nature of this form of confinement and the impossibility of claiming citizens’ rights make the duration of imposed immobility unpredictable (Bosworth, 2013) and contribute to the re-figuration of the detained as “de facto ‘illegal’” (De Genova and Roy, 2020, p. 353).

For researchers, migration-related carceral spaces bear at least four major challenges. The first challenge relates to their fluidity: between and within national territories, migration-related carceral facilities vary significantly in appearance and function. The label can be applied to architectures ranging from closed detention centres to open but remote immigration detention sites on islands (Mountz, 2017). These sites can also undergo quick transformations. On the transnational and national scale, changes in legal frameworks on immigration and asylum laws can transform detention architecture and practice (Welch and Schuster, 2005). On the regional level, detention centres are often built, rebuilt or deserted over a few years (Garelli and Tazzioli, 2017). In local contexts, practices within one detention centre might change abruptly, e.g., when

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<https://doi.org/10.1016/j.metip.2023.100129>

Received 30 June 2023; Received in revised form 31 October 2023; Accepted 1 November 2023

Available online 10 November 2023

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contractors change (Dehm, 2020; Kizilhan and Noll-Husson, 2020).

Second, migration-related carceral spaces are what Nethery and Holman (2016) call “opaque institutions”. They are characterised by a high degree of secrecy and low levels of transparency, in which people detained are hidden from the public eye. Opacity is achieved using various methods, most notably via impermeable architecture, but also by denying access to visitors and supporters and limiting detained people’s access to, e.g. communications technology (Peterie, 2022). Opacity limits accountability and creates the potential for human rights violations (Wolf, 2013). Indeed, Nethery and Holman (2016, p. 1018) argue that opacity not only hides state and institutional violence from the public eye but also renders this violence “inevitable”.

Third, and relatedly, migration-related carceral spaces create a high vulnerability for those detained (Esposito et al., 2020). They are sites of systematic violence and abuse, not because of exceptional abhorrent behaviour from detention staff, but rather as a manifestation of a systematically installed ‘callous cruelty’ (Hooks and Lengefeld, 2022) that individual detention officers cannot counteract (Esposito et al., 2021; Judge and Loughnan, 2022). Furthermore, a growing number of research argue that some migration-related carceral institutions can be described as ‘torturing environments’ (Manek et al., 2022; Pérez-Sales, 2018; Pérez-Sales et al., 2022, 2023). Although separately, single components of a torturing environment might be coincidental elements of a prison environment and would, in isolation, not amount to torture (like receiving little or poor food, being denied privacy, being subjected to conditions preventing sleep, being subjected to humiliating treatment or without access to information), their combined effect causes severe suffering. Researchers should be sensitive towards this enhancement of vulnerabilities and its systematic nature when investigating migration-related carceral sites.

The fourth challenge for researchers is the broader context in which migration-related carceral spaces operate. Increasingly, immigration and asylum-seeking are constructed in dominant narratives as a ‘threat’ to national security rather than an issue concerning human subjects and their rights (Musrò, 2017). Racialised, gendered and class-based tropes have also been used to negatively construct the ‘migrant subject’ as either the ‘criminal other’ or the ‘vulnerable victim’ (Angulo-Pasel, 2023; Esposito, 2021). Psychological research has contributed to reinforcing these discourses and representations (Teigler et al., 2015). Methodologies should acknowledge these broader power dynamics when they aim to breach the walls of these carceral sites and amplify the voices of those afflicted. This requires engagement in critical self-reflexivity, including acknowledging the different positionalities of researchers and participants (Faist, 2012) and one’s complicities as a researcher within existing power structures (De Genova, 2013).

In sum, research in immigration confinement spaces, which are heavily constrained settings, involves serious ethical considerations (Strous and Jotkowitz, 2010). Considering the different challenges, we argue that investigations aiming to unveil and challenge harmful institutional practices must break with prevailing methodological paradigms. This includes reaching beyond a no-harm approach (Stierl, 2020). De Genova (2013, p. 252) claims that “there is no neutral ground”. A supposedly neutral position, or a position claiming objectivity, would safeguard the unjust and harmful status quo (Lorde, 2018). So, how can researchers investigate institutions of confinement that escape our gaze but might harm those inside in a quickly transforming context? What methodologies may be used to grasp the complex effects of detention on the people detained? These are the questions this paper aims to address.

Overall, this methodological article argues that research on migration-related carceral sites should search for transdisciplinary alliances. The development of novel approaches should embrace multilevel connections, e.g., between psychosocial, ecological and human geographical research approaches that trace the interdependences of persons and environments with a focus on social justice (Esposito et al., 2015). To overcome these access challenges and to investigate the

psychological impact and subjectivation related to migration-related carceral sites, we promote a novel psycho-geographical counter-mapping of migration-related carceral spaces as a mixed methods (MM) grounded theory (GT) approach (MM-GT). We first outline the relevance and possibilities of counter-mapping methodologies and explain the psycho-geographical counter-mapping as MM, including the mapping component and especially the Torturing Environment Scale (TES, Pérez-Sales, 2016) within a semi-standardised interview. Second, the paper explains the merger of all components into the MM-GT model and discusses this innovative methodological approach using the metaphor of an architectural arch (Creamer, 2018). Third, we illustrate the application of the counter-mapping MM-GT model in two migration-related carceral sites: Mexico’s *estaciones migratorias* (EM, English “migration stations”) and the EU’s hotspot camps on Samos. Reflecting on incongruences and ruptures that occurred in the empirical counter-mapping studies, we conclude by proposing an ideal sequential model to counter-map migration-related carceral spaces utilising MM-GT.

2. Counter-mapping detention and the Torturing Environment Scale

Following the previous explanations on the practical and ethical challenges of researching migration-related carceral spaces – fluidity, opacity, the creation and reinforcement of vulnerability and the load with asymmetrical power relations – this section offers a novel psycho-geographical counter-mapping as a creative methodological approach to investigating these sites.

We first present a brief overview of counter-mapping methodologies and then focus on the mapping of detention sites. Accordingly, we explain the psycho-geographical counter-mapping as a merger with the TES’ investigation of migration-related detention spaces as possible torturing environments.

2.1. A psycho-graphical counter-mapping of migration-related detention sites

Counter-mappings are part of a *critical cartography turn* highlighting the power of map-making in geographic knowledge production. Counter-mappings are suitable for the investigation of migration-related detention spaces, as they counter the previously explained challenges, especially the production of opacity and the reinforcement of people’s vulnerability. In accordance with Foucault’s understanding of power as productive, *critical cartography* systematically counters oppression (Dalton and Mason-Deese, 2012). As such, counter-mappings are sensitive to mechanisms of oppression and aim to dismantle, explicate and create powerful alternatives to them. Technically, this means making structures of harm and oppression visible cartographically or provoking counter-narratives of alternative spaces. Counter-mapping involves generating and critically visualising counter-topographies that re-connect marginalised communities and their struggles. Due to the possible interdependences of built environments, social spaces and psychological effects on different scales, counter-mapping is a means of transdisciplinary connection. The possible forensic character of map-making is an additional gain for usage in social justice research (Lo Presti, 2019).

In recent years, the explicit usage of counter-mappings has become more frequent in critical migration research (Casas-Cortés et al., 2017; Campos-Delgado, 2018; Tazzioli, 2015). In this context, *critical cartography* counters state-centric maps in which borders are drawn as mere lines or that depict migration movements as ‘massive invasions’ (van Houtum and Lacy, 2020). Other examples of the employment of counter-mappings in migration research involve the visualisation of necropolitical landscapes where people on the move are left to die (Forensic Architecture, 2020; Lo Presti, 2019) or, instead, of safe passages that counter the deadly obstructions of border regimes (Liebscher

and Fisher, 2018). Individual counter-mappings show how the border, as a securitised device and a three-dimensional spatiotemporal zone, moves with the migrants' bodies (Campos-Delgado, 2018; Russell and de Souza, 2023). At the same time, individual or collective counter-mappings are able to visualise subjectivation processes and emotions. Campos-Delgado (2018) represents cognitive map-making as a storytelling device of irregularised migrants that challenges the systematic invisibilisation of their individual stories, highlights agency and dreams and addresses the violations of human rights they experience.

For the investigation of detention sites, Mountz (2013) emphasises the capacity of counter-mapping to interrupt the colonial history of maps and comments that "while states conceal, [...] maps reveal". According to Mountz, mapping detention and isolation patterns is an essential pillar of holding states accountable and contributing to transformative change. Gill et al. (2018) emphasise the communicative aspects of maps with counter-mappings identifying topographies of carceral systems that connect seemingly disparate sites and multiple dimensions. On different scales, counter-mappings have helped document detention facilities' existence and operational characteristics that might otherwise be prevented from location and obscured from public view (on the global scale, see, e.g., Global Detention Project, 2023; on the national scale, see, e.g., Musiol, 2020).

Beyond the mere localisation of a detention facility, however, the opacity of detention institutions also creates the imperative to find creative ways to make 'visible' what happens inside these sites and to amplify detained people's voices, views, and claims. While different counter-mapping approaches portray different scales and topographies, the counter-mapping approach proposed in this paper is a novel psycho-geographical method (Manek and Fernández de la Reguera, 2022) that aims simultaneously at the scale of the institution *and* of the subject: It produces an alternative map of the detention environment according to the subjectivation process experienced by detained or formerly detained people. Our method considers the agency of subjects and focuses on subjectivity as a means of critical inquiry (Bridger, 2013; Silvey, 2004). In doing so, it relies on ideas from feminist and critical migration research (e.g., Dalton and Mason-Deese, 2012; Maillet et al., 2017), including the scales of the everyday, the body and the emotional while acknowledging transnational migration regimes (Forensic Architecture, 2020; Lo Presti, 2019).

Our definition of psycho-geographical counter-mapping as MM-GT presents it as a process that groups a variety of MM data. The visual map-making process is accompanied by a semi-structured interview following the structure of the TES subscales.

2.2. The Torturing Environment Scale (TES)

The TES is a novel instrument to investigate detention environments quantitatively and qualitatively. The TES (Pérez-Sales, 2016) is a validated instrument that helps scholars identify whether an environment can be considered torturing (Cakal, 2018; Pérez-Sales et al., 2021). The TES' primary tool is an assessment of the environment. It measures eight subscales in the environment of the detention centre, as portrayed in Fig. 2: (1) contextual manipulations, (2) fear-producing actions, (3) pain-producing actions, (4) extreme pain, (5) sexual integrity, (6) need to belong, (7) actions targeting identity and sense of control and (8) interrogatory.

As an MM approach, the TES quantitatively assesses the environment while exploring additional subscale features in a semi-standardised interview manner. While the TES indicates exposure to a torturing environment, it is not supposed to measure a detained person's suffering (Pérez-Sales et al., 2021). However, the TES' assessment of a possible torturing environment includes an evaluation of the mental health of detained people, which can be connected to additional psychological measures (Pérez-Sales, 2016).

Data collection with the TES can be integrated into the methodological structure of the counter-mapping as it visualises specific

conditions and events of a torturing environment (see Fig. 2). Incorporating TES in this way, our proposed counter-mapping process thus groups a variety of MM data. However, as the counter-mapping aims to amplify the voices of the affected, the development of a theory on migration-related detention sites and subjectivation should be grounded in their lived experiences. We, therefore, methodologically embed it in the framework of GT. In the next section, we propose psycho-geographical counter-mapping as an MM-GT approach to developing a theory on detention and subjectivation and consider its methodological possibilities and pitfalls.

3. Methodology: Counter-mapping carcerality as a fully integrated MM-GT approach

Given the practical and ethical challenges of researching migration-related carceral spaces and the characteristics of the psycho-geographical counter-mapping methodology, a merger of deductive and inductive, qualitative, quantitative and visual methods (MM) within a GT framework makes sense (Creamer, 2021; Guetterman et al., 2019).

In the following, we explain the importance of each 'component', MM and GT, individually. Second, we demonstrate that MM-GT is more than the sum of its parts using the metaphor of an architectural arch.

3.1. MM: A mixed-method approach ...

As MM-GT, the proposed psycho-geographical counter-mapping approach combines quantitative, qualitative, and visual elements, which we argue are non-excludable. Quantitative methods, such as gathering statistical data, e.g. on the TES subscales or mental health measures, have the advantage of fostering comparability with other studies when the paradigm includes a representative sample of participants (Bosworth, 2013). However, the variance of experience, even within the same environment, might be high and even contradictory: Detention experiences might differ substantially according to time, place, space and across intersectional axes of difference. Histories gathered with a qualitative approach that uses observation and in-depth interviews can reveal how a personal experience may diverge from the norm. Yet, qualitative verbal testimonies might also lack a systematisation. They depend on genre knowledge, language proficiency and often miss, for example, a system's spatial configuration that impacts detained people's subjectivation processes beyond the treatment by detention staff and immigration officers (Pugliese, 2008). Visual methods such as counter-mapping can illustrate an institution's physical and psychological features in a way that is objective and elicits a more immediate emotional response from the viewer than verbal reports.

From the standpoint of social justice, uncovering subjugated knowledge and contributing towards transformative change benefits greatly from the triangulation of different data, which gives rise to contradictions and tensions (Hesse-Biber, 2012) and necessarily leads to dissonances and ambiguities within empirical evidence. According to Creamer (2021), such dissonances – even paradoxes – might be the first indicator of and highlight a phenomenon's social complexity. The study of migration-related carceral spaces requires a framework which aims at acknowledging and integrating dissonance and complexity. MM research allows a greater engagement with the complexity and nuance of research, especially when it comes to reconciling incongruent data (Creamer, 2018).

However, MM-GT reaches even beyond this scheme (Johnson et al., 2010): The merger between MM and GT represents a merger of crucial ideas from MM research and the GT philosophy of science (Shim et al., 2021).

3.2. ... meets GT: From a grounded theory approach towards MM-GT

GT is a research attitude that moves forward questioningly and seeks to become aware of contradictions and possible blind (or 'white') spots.

As multiple different and eclectic models of GT exist, GT itself is diverse: it is a methodology, a method, and a product (Breuer et al., 2019). GT is methodologically well-suited to elaborate a theory which is first and foremost (but not exclusively) grounded in the voices of those whose processes of subjectivation are testimonies of systems of power as empirical data (e.g., current and former detained people). At the same time, the iterative process of GT allows and requires critical reflection and adaptation to unforeseen contradictions and conflicts. GT approaches recognise that existing presuppositions must be critically questioned and necessarily adapted, suggesting even that existing literature might distort the researcher's perceptions of empirical evidence (McGhee et al., 2007). To put it somewhat exaggeratedly, in a field of research which is permeated by power relations and constraints, the identification of contradictions in the daily reality of migration-related detention and confinement becomes a goal; these contradictions highlight ruptures in theorisation that produce counter-narratives to hegemonic knowledge (Malagon et al., 2009). Most probably, such contradictions will emerge and be essential for developing the theoretical model.

Linking MM and GT might seem contradictory at first sight: The first central advocates of GT opposed the idea of hypothesis testing since the systematic confirmation vs. falsification of hypotheses is at the core of quantitative research (Charmaz, 2020). However, contrary to evolving as a homogenous or orthodox research canon, GT is recognised as a nodal point where different research traditions and disciplines intersect (Charmaz and Thornberg, 2021). While a canon in qualitative studies has made progress (Levitt et al., 2018) and yet, especially regarding GT, is still developing (Charmaz and Thornberg, 2021; Creamer, 2021), openness exists towards the elaboration of an idiosyncratic but well-defined GT approach. GT provides grounds for including different data sets in psychological case studies, including visual data (Creamer and Edwards, 2022). Beyond case studies, GT enables 'grounded visualisation' (Knigge and Cope, 2006), synthesising multiple data and interdisciplinary research by integrating spatial/visual data and subjectivity. In doing so, grounded visualisation is a GT approach that methodically connects psychological and human geographical research.

Beyond GT as a method for data evaluation and theory generation, Johnson et al. (2010) explain that GT can be methodologically tailored to work well not only in the linkage of theory and practice but also for connecting theory generation with theory testing. In this iterative process, an interplay of inductive and deductive methods allows us to sharpen critical reflexivity and look for bias that might emerge from pre-conceptions or previous interactions with the field. Following an iterative process of condensation and reflexivity (Strauss and Corbin, 1996), also with MM data sets, the given material expands subsequently and merges into a unique analytic framework. The interplay between contextual and conceptual analytical strategies can give rise to theories with explanatory possibilities – explaining complex phenomena. This is maintaining a variance of practices and experiences while describing *what* is happening, *how* it is happening and working on a hypothesis about “*why*” something is happening (Creamer, 2021, p. 4).

The benefit of MM-GT is the mixing of different data, but also its 'open-minded' exploration while maintaining some a priori guiding structure. While MM-GT allows for both local and general explanations, it also provides space for theory generation and theory testing to interact. This sharpens the view of contradictions and white spots in challenging research fields. Creamer (2021, p. 6) emphasises that social-psychological themes invested based on an MM-GT are “nearly endless”. This might include the recovery from trauma as well as person-environment interdependences (Kelly, 2006). Creamer (2021, p. 13) argues that the approach is a “process that is deliberate about engaging the dissonance and paradox that links MM, GT and complexity”. Out of these considerations, we advocate for a fully integrated MM-GT approach to researching subjectivation processes within migration-related carceral spaces.

3.3. If MM-GT was an architectural arch ...

A fully integrated MM-GT theory needs a precise conjunction for each step of the research process (Creamer, 2021): during the elaboration of questions and hypotheses within the field, in data processing and evaluation, and eventually in the communication of results. Before sketching its concrete application in detention contexts, we follow Creamer's (2018) introduction of the architectural arch for fully integrated MM designs. First, we elaborate on it to metaphorically explain the methodological requirements of a fully integrated MM-GT model. Second, we consider quality criteria for MM-GT, especially (a) *credibility*, (b) *transparency* and (c) *reflexivity* that allows a stable stand that opens possibilities for social justice.

Fig. 1 explains the metaphor of the MM-GT design as an architectural arch. It links the elements of the methodological paradigm with their metaphorical equivalents. In the metaphor of the architectural arch, the *keystone* represents the integrated MM results. Nevertheless, without a meticulously, methodologically planned construction of each component, an architectural arch would barely withstand aversive forces. Especially when a research field is (politically) as contested as migration-related detention, a well-shaped and solid MM-GT arch is needed. Developing the metaphorical approach further, the arch's *abutment* with the two pillars consists of the visual qualitative and quantitative structures and the paradigmatic methodological positions accompanying them.¹ The research question(s) represents the *span* and bridges the open questions and gaps in the research field. The *imposts* of our architectural arch (see Fig. 1) are the respective parts of the research design: Which paradigm can we build on for the data collection, evaluation, and results? The *spring points* represent the approach to the research field: What reflexive, ethical and process-orientated steps do we undertake to start the data collection process? The *voussoirs* of the MM-GT architectural arch consist of the particular steps of data collection and evaluation that link the research design with the integrated results. As wedge-shaped elements, *voussoirs* turn aside the thrust of the mass above and transfer it from stone to stone. The keystone can be inserted without further auxiliary work when both sides are aligned. Ultimately, the arch supports itself without the need for mortar. The results of different theories and methodological strands tested by triangulation mutually validate each other: The more data triangulation takes place in the process of theory production, the higher the robustness of the process and end product. In this model, triangulation can take place between different data modes but also within qualitative methods.

However, during construction, the arch needs support from a *scaffold* that withstands the tensions between the two pillars. In the MM-GT arch, the supporting framework consists of more flexible GT epistemologies emerging from recent methodological considerations that withstand the tense debates around quality criteria (Charmaz and Thornberg, 2021). While in quantitatively oriented psychological research, the triad of objectivity, validity and reliability is – not exclusively but – predominantly leading the debates around the quality of research, qualitative-oriented researchers propose divergent criteria, especially for GT research (Charmaz and Thornberg, 2021). Given the specific challenges of research on immigration detention, specific methodological decisions contradict existing paradigmatic quality criteria. In the following, we argue for different criteria, paying specific regard to (a) *credibility*, (b) *transparency* and (c) *reflexivity*. For the MM-GT paradigm, these three criteria are particularly crucial for the moments of integration that accompany the entire research process and metaphorically cumulate in the arch's keystone: the integrated results.

Credibility arises from the alignment between the different parts and steps of the generation of theory (e.g., original theory, research question,

¹ This paper advocates for the integration of qualitative data. In the metaphor of the arch, we subsume the visual data in reflections on the “qualitative” pillar as part of the visual GT – due to the lack of a yet existing theoretical canon.

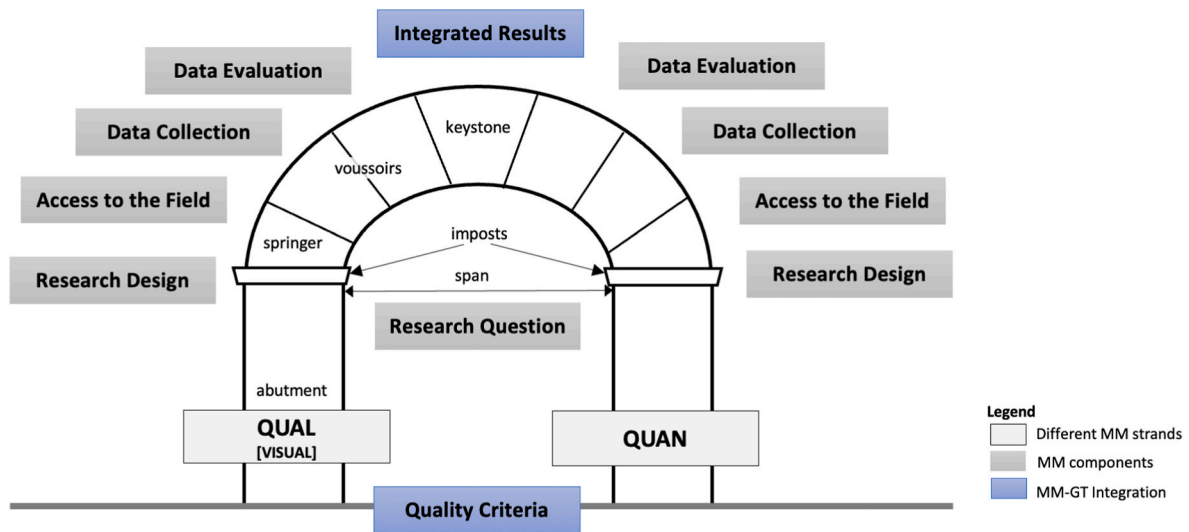


Fig. 1. Architectural arch.













































<p>Cartography</p> <p>Physical map </p> <p>Cognitive Map </p>	<p>Colour Code References</p> <ul style="list-style-type: none">  Fear & Unsafety  Safety  Warmth & Heat  Cold  Disgust  Joy ... 	<p>Icon References</p> <table border="0"> <tr> <td> Barbed Wire</td> <td> Harmful Event</td> </tr> <tr> <td> CCTV</td> <td> Quarantine</td> </tr> <tr> <td> Security</td> <td> Food</td> </tr> <tr> <td> Federal Police</td> <td> Unhygienic Cond.</td> </tr> <tr> <td> Military</td> <td> Protests</td> </tr> <tr> <td> Doctor</td> <td> Conviviality ...</td> </tr> </table>	 Barbed Wire	 Harmful Event	 CCTV	 Quarantine	 Security	 Food	 Federal Police	 Unhygienic Cond.	 Military	 Protests	 Doctor	 Conviviality ...
 Barbed Wire	 Harmful Event													
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 Federal Police	 Unhygienic Cond.													
 Military	 Protests													
 Doctor	 Conviviality ...													
<p>Semi-structured Interview</p> <p>What does the institution do to the subjects?</p> <p>What do the subjects do to the institution?</p>	<p>Torturing Environment Scale (TES)</p> <p>Subscale Items & Open Questions</p> <ol style="list-style-type: none"> (1) contextual manipulations (2) fear-producing actions (3) pain-producing actions (4) extreme pain (5) sexual integrity (6) need to belong (7) identity and sense of control (8) interrogation 	<p>Add. Measures?</p> <p>Environment</p> <p>MQLD</p> <p>WHOQOL</p> <p>Mental Health</p> <p>WASS</p> <p>HSCL-25</p> <p>...</p>												

Fig. 2. ‘Psycho-geographical counter-mapping components’.

data collection, analysis, and results; Stenfors et al., 2020). Especially in a research field that is entrenched by scepticism and distrust, like immigration detention, credibility is required regarding participants as well as receivers of the results. Research fulfils the criterium of credibility only if it is methodologically transparent and offers an in-depth and critical reflection on the complex reality it aims to illuminate.

With the complexity of GT grounding procedures and MM data integration, *methodological transparency* is a crucial concern for MM-GT approaches (Creamer, 2021; Levitt et al., 2018). Acknowledging Creamer’s (2021, p. 132) criticism that conventional MM approaches tend to “camouflage” the level of interaction between the qualitative and quantitative data in the different steps of a research process, MM-GT requires even more effort to provide transparency. At the same time, methodological transparency in MM-GT alone is no guarantee for the validity of results: rather than rigorousness or warranty, it aims to *integrate* results in a credible way. Therefore, *procedural transparency* about access to the field and data collection is equally crucial to

dismantling the opacity of these institutions – as well as to provide insights on [self]reflexivity on the research perspective and positionality.

Many authors regard *reflexivity* as a concern of special significance for the quality of the production of a GT (Breuer et al., 2019). On the one hand, Creamer (2021) highlights reflexivity as an engagement in reflecting on the tensions of wrestling between qualitative and quantitative strings. On the other hand, reflexivity is a continual process of engaging with and articulating the researcher’s place within the research context (Charmaz, 2020; Stenfors et al., 2020). It builds another bridge for an MM-GT into the field of social justice research: If GT is used as a veritable reflexive method, it should facilitate the generation of a theory that explains unexpected patterns of social reality. In methodological terms, critical reflexivity is indispensable for interdisciplinary research, which is able to listen in postcolonial spaces (Maggio, 2007).

Taken together, psycho-geographical counter-mapping as MM-GT, which fulfils these three quality criteria, provides the following

ground for social justice: First, it gathers MM data, allowing peoples' lived experiences within an opaque system that fosters injustice and harm to become visible. Second, reflexive GT can point towards white spots in existing theories that explicate powerful social forces of injustice. Third, transparency and reflexivity contribute to the credibility of the integrated results, which is essential given the political landscape of scepticism and scrutinisation. Fourth and eventually, credible, transparent and reflexive GT might provide ideas on which kind of social change would be needed and how change could occur (Charmaz, 2020).

4. Doing counter-mapping as MM-GT: the architectural arch's voussoirs

Having explained the central ideas of the MM-GT methodological paradigm, the following section holds a practical focus. While the initially presented counter-mapping and the TES metaphorically build the arch's impostes, this section concentrates on the architectural arch's voussoirs: How to apply the components of the psycho-geographical counter-mapping as MM instruments and how to use them as a MM-GT?

4.1. Data collection: looking at the voussoirs

Since detention can have multiple faces and grades of opacity, different forms of map-making are possible. If physical maps of a detention complex exist, they can become the baseline of a counter-mapping process (Manek et al., 2023). Physical maps add to the comparability and visual integration ability of different maps, given that they have the same spatial structure but are produced from different power positions. Adding photos as references to the physical map has been an essential step in helping participants orient themselves geographically. If the researcher does not have access to physical maps, satellite images, or high-resolution photos, one option is the free drawing of a cognitive map based on spatial memories (Giesecking, 2013; Kitchin, 1994; Majdzadeh, 2019), as if participants would draw a site plan.

Fig. 2 displays the different components of counter-mapping as a method, starting from the cartographical element, followed by the indication of colour codes and the counter-mapping's icon set. The figure refers to the semi-structured interview that accompanies the mapping process, including the TES's subscales as an MM instrument. Technically, the counter-mapping uses georeferentiation to assign emotions and physiological sensations via colour codes. Fig. 2 explains that participants would colour an area where they feel unsafe in orange; purple would instead indicate disgust. Specific environmental features like barbed wire, surveillance cameras, or specific actors and events can be attributed via icons to a specific location. In the counter-mapping process, participants may narrate specific or new situations requiring adding additional colour codes or new icons. In that case, the counter-mapping allows ad hoc development and integration. This process leads to reconstructing the detention environment from the bottom up, understanding it as a built environment – and as a social and emotional space (Massey, 1984).

The figure adds a proposal for quantitative tools that researchers could add to the mapping if appropriate. Further quantitative measures could be added beyond the TES for further data triangulation regarding the environment and psychosocial factors. Examples include instruments that investigate the standard of living in carceral sites or instruments that investigate mental health in the documentation of torture (see Fig. 2). In any case, questionnaires should be formulated in simple language so that they can be understood by people who have different experiences and cultural backgrounds. Nevertheless, in each counter-mapping session, it is crucial to provide procedural transparency and maintain sensitivity for individual constraints when working on continued (questionnaire) questions. Within the process of data collection, the monitoring of the quantitative measures provides an orientation for, e.g., modifying counter-mapping and sampling strategies.

4.2. Data evaluation, integration and theory development: From the voussoirs to the keystone

The counter-mapping's integration of maps, colour codes, icons, the narratives of the semi-structured interviews and the answers to the TES provides ground for MM data triangulation. The quantification of the GT codings provides further triangulation possibilities within the qualitative data.

To evaluate the qualitative interview data, we follow the understanding of Strauss and Corbin (1996) of a GT-based evaluation as a condensation of categories from the given material and their subsequent expansion into an analytic framework. The analysis process continually tests and sharpens categories deductively. The coding process builds on three sequential parts: open, axial and selective coding. Open coding is considered a "creative act" (Breuer et al., 2019, p. 256), consisting of mere category building. Axial and selective coding are crucial steps in developing the explanatory theory with increasing levels of abstraction. The so-called axis categories set the merging codes in relation: similar concepts are grouped together and further developed in terms of their properties and dimensions. Selective coding validates the relations of axial coding categories. It defines a core category as "the central phenomenon around which all the other categories are integrated" (Strauss and Corbin, 1996, p. 116). Each coding process generated an updated step towards theory, with new empty spots becoming visible. Therefore, adding new interviews until a point of meaning saturation is a common GT practice (Hennink et al., 2017). The writing of memos accompanies the entire GT process and sharpens the documentation and generation of theory. Memoing includes analytical notes on conceptual connections, internal discussion, and feelings of the researchers connected to decision-making in the process of theory development (Breuer et al., 2019; Strauss and Corbin, 1996).

To assess the transparency and, eventually the credibility² of the coding process and theory building, we propose intercoder reliability (ICR; see, e.g. O'Connor and Joffe, 2020) to explore the agreement between multiple coders regarding how different coders should code the same data with the emerging code system. Out of the validated semantic categories, an additional selective coding phase, the process of integrating, interpreting, and refining the theory develops (Scott, 2004; Strauss and Corbin, 1996). It gives way to building an explanatory meta-theory in the context of migration-related detention.

Integration of the counter-mapping visual data, the TES quantitative measures on the subscale level and qualitative content, as well as additional measures, occurs at the interpretation and reporting level. Joint displays (Fetters et al., 2013) have the particular potential for psycho-geographical counter-mapping, as they allow the integration of single mappings, narrative and data via georeferentiation.

5. Migration-related carceral sites in Mexico and Samos: the arch put into practice

We will briefly outline two collaborative studies connected to doctoral research on migration detention and subjectivation to illustrate how they intended to implement counter-mapping as a MM-GT model: one on the Mexican EM and the other on the EU's refugee camps on Samos.

Despite architectural differences – the EM are closed detention centres, while the camps on Samos are surrounded by barbed wire where one could look through – both scenarios share obvious similarities, especially the discourse of 'dignified accommodation' (Cámara de Diputados del H. Congreso de la Unión, 2014; Hellenic Republic Ministry of Migration and Asylum, 2021) with the simultaneous denial of documented human rights violations (e.g. Mijatović, 2018; Sin Fronteras, 2019). Both scenarios involve significant changes in relatively short

² With a focus on plausibility and communicability.

terms, with Samos being exemplary for the five Aegean hotspot islands, where new remote and securitised Closed Controlled Access Camps (CACC) are built (Samos Advocacy Collective & Europe Must Act, 2022). While the previous old camp bore apparent dehumanising characteristics of a torturing environment (Médecins Sans Frontières, 2021; Manek et al., 2023), the opening of the CACC, flanked by the discursive affirmation of human rights, revealed a securitised facility and de facto detention (I Have Rights, 2023).

Although both studies build on the TES and counter-mappings, substantial differences exist between them (see Table 1). The entire empirical studies and a discussion on [self]reflection in the psycho-geographical counter-mapping process are available elsewhere (see Manek et al., 2022). The following section only illustrates crucial moments for MM-GT, particularly data incongruences and unexpected changes in the fluid environment. Out of the explanation of pitfalls and challenges, we formulate suggestions for ‘ideal’ future methodologies and practice.

Table 1
Similarities and differences in immigration detention studies between Mexico and Samos.

	Mexico [anonymised reference]	Samos [anonymised reference]
Timespan	2018–2021	2021–2023
Research questions	Are EM torturing environments? What processes of subjectivation is linked with detention in EM? What is the role of EM within the US-Mexican migration regime?	Has the old camp hotspot camp been a torturing environment? Does the CCAC keep the promise of neat humanitarian conditions or do residents face a torturing environment? What processes of subjectivation are linked with de facto detention in the securitised CCAC?
Hypotheses	Mental constraints were expected to worsen with the number of reported characteristics of a torturing environment. Mental health was expected to worsen with the time spent in detention.	The conditions were expected to improve with the resettlement of the CCAC, compared to the old camp in terms of a torturing environment.
Access to the field	Different member organizations of the GIDMT	1st author in connection with different local human rights actors
Sampling	Convenience and purposive sampling	Theoretical and snowball sampling
Sample	N = 56 detained and formerly detained asylum seekers of diverse nationalities and varying socio-economic status [TES] N = 10 human rights actors [countermapping; in-depth interviews]	N = 7 residents of the old camp N = 8 residents of the CCAC
MM [focus]	yes [QUAN]	yes [VISUAL-QUAL]
GT [ICR]	yes [no]	yes [yes]
Quantitative	TES Mental health measures ^a	TES Mental health measures ^b
Qualitative	Open questions TES In-depth interviews	Open questions TES Semi-structured Interview
Visual	Cognitive map	Physical map and satellite photos of the CCAC
Crucial moments	Incongruences between quantitative and qualitative results	Resettlement of the camp, changes in institutional practices
Challenges	No physical maps available	Quick changes of residents and NGOs Inaccessibility of camp administration Resource intensive

^a according to GIDMT (2020).

^b namely the WHOQOL, HTQ-R and HSCL.

5.1. Mexico’s estaciones migratorias: [in]congruences

The research on the Mexican migration detention system (Manek et al., 2022) explained the creation of torturing environments in EM. For data evaluation, the descriptive quantitative and qualitative findings unanimously emphasised that *context manipulation* occurs in the EM intersect with harmful treatment. The spatial data of the counter-mappings showed that these occurred especially in the cell areas and sanitary installations.³ The integration of results generated a crucial moment for theory production when incongruences manifested particularly on the intersectional level: Although the qualitative accounts depicted the detention centre to be a highly gendered place that produced differentialised harm, the inferential findings did not support the assumption of gender-based difference regarding the experience of detention.

These findings – the arch’s *keystone* – emphasised both the need to shed further light on detention practices in terms of social justice and to refine methodological approaches: How can qualitative-visual exploration of intersectional differences be directly included into theory-building as a corrective of quantitative results that might be ignorant to them?

5.2. Samos: From humanitarian dehumanisation to a closed confinement camp

The research on Samos (Manek, in prep.) aimed at integrating the lessons from the previous research on EM and thus focused more on integrating visual data and the systematic development of a GT sensitive to intersectional differences.

The data collection and evaluation phases included relocating participants from the old camp, located directly in an urban area, to the newly built CCAC, isolated in the island’s interior. The data collection brought together participants who had experienced the old camp and participants living in the CCAC. The counter-mappings of the old camp (Manek et al., 2023) visibilised prevailing feelings of unsafety and disgust: colour codes were all orange and purple. Icons indicated fear-producing police violence and fights. The integrated counter-mappings depict a landscape of dehumanisation which goes hand in hand with high values in the TES subscale contextual manipulation: lack of water and food or expired food, hindering of defecation due to unhygienic conditions or the impossibility of sleep due to permanent light or noise. Residents reported severe psychological constraints connected to living in the old camp. The camp’s resettlement led to a drastic rupture between the old camp and the new CCAC regarding place, architecture and infrastructure. According to the official discourse, one would expect the conditions to improve substantially. However, the visual data of the counter-mappings gave visibility to the otherwise unseen: They contained similar colour codes and icons, orange for unsafety being the dominant colour. In addition, despite the drastic changes, the quantitative evaluation did not show significant differences between the old camp and the CCAC at the level of the TES subscales. How could one explain that, although from the outside, the conditions of the CCAC seemed to have improved on some levels, the space continued to harm?

Explanations arise from the qualitative data of the semi-standardised interviews: Residents reported feeling confined and dehumanised as subjected to a prison-like structure that promises safety but does not welcome or support asylum-seekers who flee war and persecution, treating them with suspicion and placing them under excessive security measures instead. Unlike openly harmful conditions, the treatment of

³ They included overcrowding, lacking hygiene or subjection to extreme temperatures or humidity. Most interviewees reported an alteration of their basic physiological functioning based on external factors like hunger, thirst, limited ability to defecate, or sleep dysregulation.

residents in the CCAC consists mainly of omission and hindering access to health care in emergencies or chronic diseases. Instead of the promised functionalities and care systems, residents reported a veritable system of uncare. Like the Mexican EM, the code system indicated the production of differences between subgroups of residents in the CCAC; this time, the code category of racism was predominant. Out of the selective coding process of the GT data evaluation, a core category emerged: the *'necropolitical space of [un]care'*. Four central mechanisms manifested: [un]care, [un]safety, [dys]information and [dys]functionality. Its modus operandi promises services and fundamental rights but may fluidly turn them into their opposite, according to sorting mechanisms that consist primarily of racism, intersectional divisions and spatial configurations of different zones within the CCAC.

As an explanatory theory, the *necropolitical space of [un]care* adds a layer of meaning to the torturing environment hypothesis. It explains how – and why – torturing environments that hinder the reproduction of a dignified life emerge within the CCAC via the (spatial) distribution of harm along racialised and intersectional lines and situates the CCAC in the time-space continuum of the border regime. Fig. 3 further visualises the *necropolitical space of [un]care*: prototypical qualitative elements for relevant codes merge the integrated visual counter-mappings that combine colour codes and icons from single mappings with central elements of the qualitative data and connect them with indicated places on the map (e.g., the medical office or food line).

Joint displays like Fig. 3 can further contribute to the integrated results' credibility. Credibility is based on the triangulation of MM measures, including the qualitative relationships within the GT coding scheme, the quantification of its code distributions and their relationship with the quantitative instruments.

5.3. Challenges of researching these sites

Most of the encountered pitfalls in the described research reality are connected to the challenges we introduced at the beginning of this paper: inaccessibility and opacity, the creation and reinforcement of vulnerability and difference, and asymmetrical power relations and presumptions. Was it nevertheless possible to apply the theoretical arch and pursue *credibility, transparency and reflexivity*?

Access to the research field took work. In both cases, direct access to the carceral site was unattainable for the first author. Authorities did not respond at all. Consequently, counter-mappings took place in third

spaces. In Mexico, however, a stable, broad human rights network facilitated access to the EM for professionals and research group members for data collection. In contrast, collaborations were short-term on Samos as quick changes of human rights actors characterise the humanitarian landscapes of the Aegean hot spot islands (Dijstelbloem and van der Veer, 2019).

Sampling strategies should also consider these factors and reflect the inclusion of specific social groups in terms of who could be met outside the detention site (e.g., during temporary release or after release) – and who not. In addition, quantitative and qualitative methods might require different sampling strategies: a representative and large-scale sample for quantitative analysis with simultaneous in-depth qualitative data. In the EM, gender became a crucial category highlighting the need to investigate intersectional differences. However, in the first phase of data collection, the sample on Samos only included male-identifying participants. Together with the complex accessibility of migration-related carceral sites and the creation of vulnerability, which became evident in constraints for the participants, different approaches to data collection should be reconsidered. It is essential to ask how many quantitative instruments and interview questions are adequate and to reflect on which other groups' lived experiences could answer the same or even different relevant questions and instruments, apart from detained people.

Integrating MM data and results is pivotal. In the present studies, visual data integration has been fruitful for this attempt. The highly defined map allowed the georeferentiation of crucial feelings and events to particular places, with colour codes and icons connecting weaving references to the dimensions of the TES and visualising the *necropolitical space of [un]care*. The method should develop further, e.g., by assembling quantitative-descriptive values or qualitative narratives to the map. These would also allow us to explore group differences visually, as the new CCAC tends to separate groups spatially, e.g., according to nationality or age. For an in-depth focus, a map as a joint display could easily add case-based integrations. This would allow to explore further ruptures and incongruences on the case level (Creamer, 2021), as an explanatory theory on migration-related detention and subjectivation must expose moments of ruptures and contradictions and make sense of them.

In the research on EM, the unexpected incongruences between the quantitative and qualitative results were vital. For the study on Samos, the unexpected shift from the torturing environment hypothesis to the

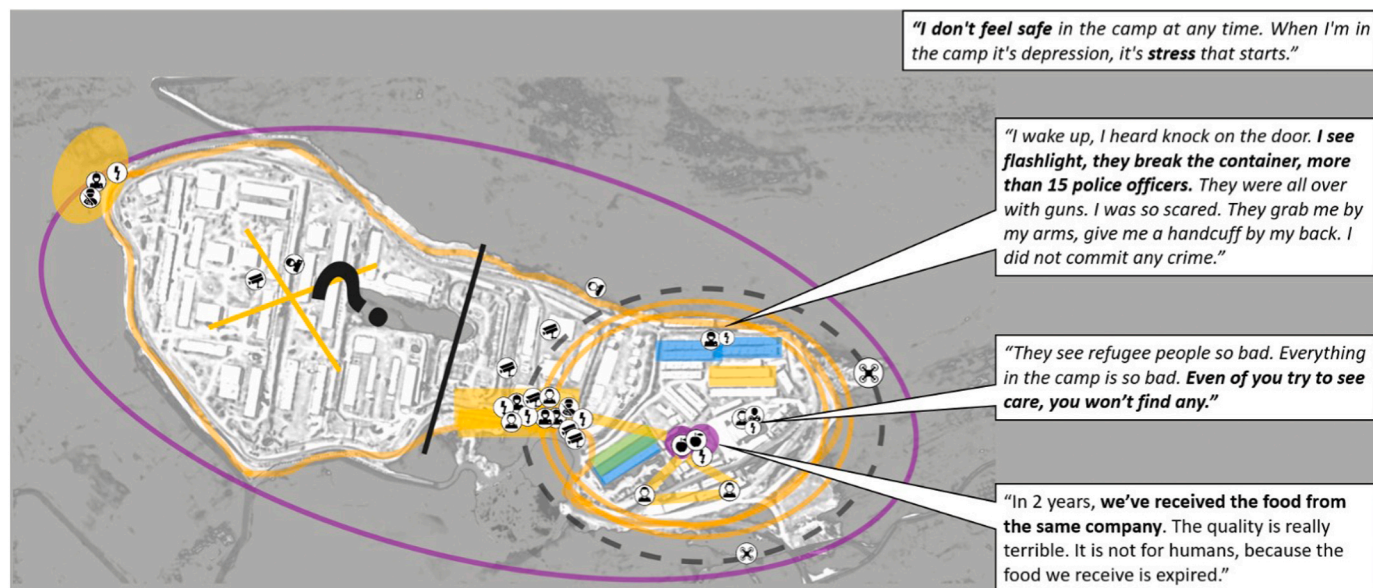


Fig. 3. 'Counter-mapping as joint display'.

necropolitical space of [un]care allowed the building of an explanatory theory that expands beyond the deductive scope of hypothesis testing. In this case, it weaves a transdisciplinary encounter with postcolonial work connected to Mbembe's (2016) theory of necropolitics. Although theories on necropolitics resonated strongly in border studies, they remain a novum in psychological research. Later research should maintain an explorative character of open research questions and explores nuances of interactions between the two concepts, the torturing environment and the necropolitical space of [un]care? The emerging working hypothesis highlighted the forms of harm and power structures within migration-related carceral sites where they produce different zones and different forms of subjectivation along racialised, gendered and class-based lines. Under these conditions, the critical reflection on how to make sense of contradictions is essential in developing the explanatory GT: anything but the existence of discordant data to make sense of would be surprising. Being sometimes alone in the field, speaking with different actors on the ground might help to challenge misleading pre-assumptions. Nevertheless, it does not replace a confrontation with oneself, even more when the final steps of theory production might occur after exiting the research field. Therefore, the need for critical review remains (Spathopoulou, 2022). Critical [self]reflexivity questions one's explicit or implicit pre-conceptions and asks for 'white' spots that might manifest in feelings of discomfort, notions of general surprise or frustration in the interview situations. A research group can provide further interpersonal space for critical reflection in the GT coding process scaffolded by an ICR. In general, we assume the criterion of reflexivity is well met in the exchange with the participants who generated the data for them: Do they find the results credible? Can we create transparency about their development and adapt the results if necessary?

6. Let data converse: an ideal sequential model of MM-GT for the study of migration-related carceral sites

Having explored the pitfalls of research on immigration detention and subjectivation, we emphasise the need to develop creative methodological models face to discordant data and demanding field access. We propose an ideal and idiosyncratic sequential model of MM-GT that provides the ground for *credibility, transparency* and *reflexivity* in a complex research landscape.

Fig. 4 portrays the ideal sequential design that emerged out of the reflections of the empirical examples. It separates three phases of the research process and explains their specific considerations in terms of inductive and deductive questions and assumptions. The figure indicates steps for each MM data strand and highlights crucial moments for GT theory elaboration.

In immigration detention regimes, sudden and profound changes might occur at all times and on different levels. Knowing about the importance of contradictions and ruptures for theory building, the earlier such contradictions emerge in multi-phased research, the better later phases can contribute to their clarification. Therefore, instead of

linking qualitative and quantitative strands sequentially in an exploratory-confirmatory paradigm (e.g. as proposed by Shim et al., 2021), different data types should question each other directly from the beginning: integration occurs on all stages of the research process. In line with the iterative questioning spirit of GT that should contribute to steady growth of theory, the focus shifts from exploratory to explanatory character. However, given the steady ruptures in the field, all phases should maintain their exploratory focus. As a tool for such deductive explorative research, we recommend using working hypotheses as statements or a group of expectations that do not require a relational component and are tested in action (Casula et al., 2021).

Phase 1 of the three sequential phases requires to carefully consider the feasibility of the research as a whole. Metaphorically referring to the *architectural arch*, it would mean fierce work on its different *voussoirs*, including the *spring points*: Is it possible to access the detention environment? Are residents of confinement camps allowed to go outside, or who else would it be possible to speak to (e.g., released people, human rights actors, detention staff)? In the process of data collections relevant questions ask if the research resonates with the participants: Does it seem useful to them? Are participants coping with the MM research requirements? Adding to previous characteristics of research on migration-related carceral spaces, it is crucial to maintain sensitivity to possible threats against participants. This paper reported individual mappings. However, mappings can also be done collectively – especially when the feeling of unsafety might require it. If no physical safe space is available, the mappings can expand into third spaces, including the digital space.

For data evaluation and integration, georeferentiation has proven an essential factor for data triangulation. In MM data evaluation of phase 1 and later phase 2, the explanatory storyline of the GT model arises succeeding by selective coding and the triangulation of qualitative and quantitative data, scaffolded by visual data: Are particular places connected to surprising narratives or values, and if so, why would this be the case? Integrating the georeferential visual counter-mapping data further strengthens the robustness of the emerging theory.

Fig. 4 displays how hypotheses with directions about the structure of the carceral site and relations between different psychosocial factors arise from the intertwining of open research questions and working hypotheses. Before further exploring them in the new data collection of phase 2, methodical changes might regard sampling strategies or methodological components. Metaphorically spoken, it allows reworking the arch's different *voussoirs*.

Eventually, the integrated results – with the crucial help of joint displays – produce the preliminary meta-model of a GT on migration-related detention and subjectivation. Nevertheless, this supposed keystone is still perceived as preliminary in the ideal sequential design. Before eventually inserting it in the architectural arch, we advocate for phase 3: A comprehensive presentation of the preliminary integrated results should allow their revision by those who provide its ground with their lived experiences. While the research design should integrate reflexivity as a central quality concern from the beginning, this last

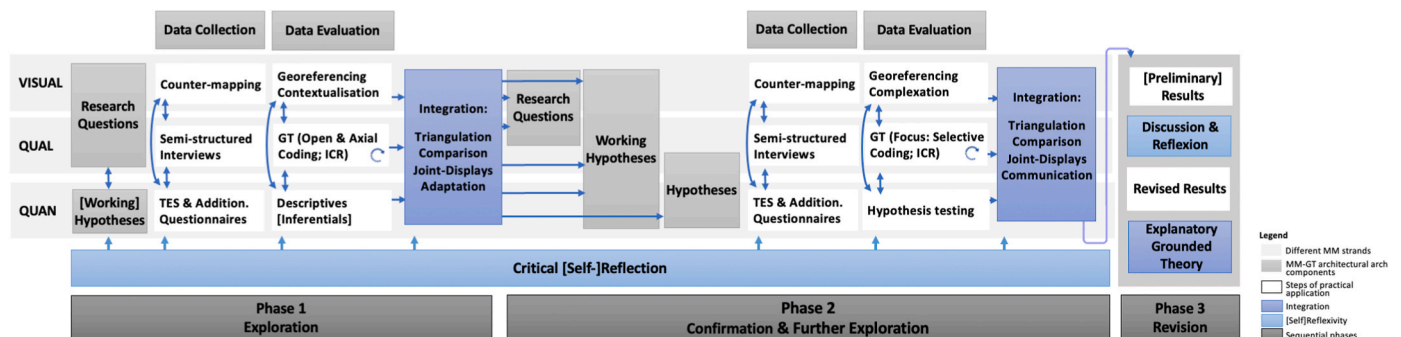


Fig. 4. 'Ideal sequential design'.

revision aims at integrating participation and providing reflexivity where it is most powerful – in the output of a study.

We propose the revised results as a theoretical explanatory model of the carceral environments and their interaction with the subjectivation of the detained people at a given moment. In the ideal sequential design, they are the veritable *keystone* of the architectural MM-GT arch.

7. Conclusion

How do we shed light on an opaque institution that produces vulnerability while not losing sight of the subjectivation and well-being of the detained? The proposed psycho-geographical counter-mapping as an MM-GT framework creatively answers the multiple characteristics and requirements. Integrating the visual counter-mapping data into joint displays allowed us to trace complex intersectional interactions between the carceral environment and the subjectivation of the detained people that quantitative or qualitative evaluation alone could not discover. It is an approach sensitive to power relations, injustice and other challenges with the potential to grant profound insights that permit rescaling the results from the intimate to the global scale (Conlon et al., 2017). At the same time, integrating MM data with new research technologies, especially the counter-mappings' georeferentiation, requires further reflection on specific quality criteria. The best attempt to deal with the absence of more specific guidelines is to guarantee inferential validity (Fielding, 2012), as addressed by the primary MM-GT considerations and interventions of the ideal sequential design.

Alternatively, with the metaphor of the architectural arch, the MM-GT design manages to construct a stable arch in which all elements are coordinated. Nevertheless, the approach is resource intensive. Being realists, the situation in the real world is, by definition, different from the ideal imagined. Our reflections provide ground for developing new and creative approaches that adapt to the realities of migration-related psychological and interdisciplinary research beyond carceral spaces that do not exist in a vacuum. In terms of temporality, there is a “before” and an “after” incarceration. In geographical terms, they are part of a broader migration regime of deterrence that produces necropolitical landscapes where harmful spaces proliferate. Our MM-GT approach allows the exploration of the person-environment interdependences. It enables the development of a longitudinal perspective on flight and illegalised migration under the explicit assumption that these are seldom linear but permeated by complex assemblages of systematic harm and subjectivation. In addition, psycho-geographic counter-mapping is also suitable for research on other social places and institutions that share the characteristic of carcerality or spatialised violence, including existing approaches to the ‘zonification’ of gendered violence in urban spaces (Marchese, 2019), psychiatric clinics (Daya, 2022) or retirement homes (Loughnan, 2022). As such, our approach encourages bridging trans-disciplinary boundaries to develop explanatory theoretical models that point beyond themselves while reaching out for social justice.

Credit author statement

Julia Manek contributed substantially to: conceptualization; data curation; formal analysis; investigation; methodology; project administration; validation; visualisation; writing of the original draft, review & editing; Dr Amy Nethery contributed substantially to, Conceptualization; methodology; supervision; validation; writing review & editing; Dr Francesca Esposito contribution substantially to, Conceptualization; methodology; supervision; validation; writing review & editing; Dr Pau Pérez-Sales contributed substantially to, Conceptualization; methodology; supervision; validation; writing review & editing; Prof Dr Holger Horz contributed substantially to, Conceptualization; methodology; supervision; validation; writing review & editing.

Declaration of competing interest

This article's research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. The authors declare no conflict of interest. The work of the third author, FE, was supported by the Portuguese Foundation for Science and Technology (grant number: CEECIND/00924/2018/CP1541/CT0004).

Data availability

Data will be made available on request.

References

- Angulo-Pasel, C., 2023. Border vigilante/Militia activity, the national security state, and the migrant “threat”. *Crit. Stud. Terrorism* 16 (1), 192–214. <https://doi.org/10.1080/17539153.2023.2170513>.
- Bosworth, M., 2013. Can immigration detention centres be Legitimate? Understanding confinement in a global world. In: Aas, K.F., Bosworth, M. (Eds.), *The Borders of Punishment: Migration, Citizenship, and Social Exclusion*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199669394.003.0009>.
- Bosworth, M., Turnbull, S., 2015. Immigration detention, punishment and the criminalization of migration. *The Routledge Handbook on Crime and International Migration* 91–106.
- Breuer, F., Muckel, P., Dieris, B., 2019. *Reflexive Grounded Theory. Eine Einführung für die Forschungspraxis*, fourth ed. Springer VS, Wiesbaden.
- Bridger, A.J., 2013. Psychogeography and feminist methodology. *Fem. Psychol.* 23 (3), 285–298. <https://doi.org/10.1177/0959353513481783>.
- Cakal, E., 2018. Debility, dependency and dread: on the conceptual and evidentiary dimensions of psychological torture. *Torture Journal* 28 (2), 15–37. <https://doi.org/10.7146/torture.v28i2.106908>.
- Cámara de Diputados del H. Congreso de la Unión, 2014. Ley de Migración. Nueva Ley publicada en el Diario Oficial de la Federación el 25 de mayo de 2011. <https://cis.org/sites/cis.org/files/Ley-de-Migracion.pdf>. (Accessed 24 November 2018).
- Campos-Delgado, A., 2018. Counter-mapping migration: Irregular migrants' stories through cognitive mapping. *Mobilities* 13 (4), 488–504. <https://doi.org/10.1080/17450101.2017.1421022>.
- Casas-Cortés, M., Cobarrubias, S., Heller, C., Pezzani, L., 2017. Clashing Cartographies, migrating maps: the politics of mobility at the external borders of Europe. *ACME: An International Journal for Critical Geographies* 16 (1), 1–33.
- Casula, M., Rangarajan, N., Shields, P., 2021. The potential of working hypotheses for deductive exploratory research. *Qual. Quantity* 55 (5), 1703–1725. <https://doi.org/10.1007/s11135-020-01072-9>.
- Charmaz, K., 2020. “With Constructivist grounded theory You Can't hide”: social justice research and critical inquiry in the public sphere. *Qual. Inq.* 26 (2), 165–176. <https://doi.org/10.1177/1077800419879081>.
- Charmaz, K., Thornberg, R., 2021. The pursuit of quality in grounded theory. *Qual. Res. Psychol.* 18 (3), 305–327. <https://doi.org/10.1080/14780887.2020.1780357>.
- Conlon, D., Hiemstra, N., Mountz, A., 2017. Geographical perspectives on detention: spatial control and its contestation. In: Flynn, M.J., Flynn, M.B. (Eds.), *Challenging Immigration Detention*. Edward Elgar Publishing, Cheltenham, pp. 141–159. Retrieved from. <https://www.elgaronline.com/view/edcoll/9781785368059/9781785368059.00018.xml>.
- Cremer, E.G., 2018. An Introduction to Fully Integrated Mixed Methods Research. <https://doi.org/10.4135/9781071802823>.
- Cremer, E.G., 2021. *Advancing Grounded Theory with Mixed Methods*. Routledge. <https://doi.org/10.4324/9780429057007>.
- Cremer, E.G., Edwards, C.D., 2022. Editorial: introduction to the special issue, innovative approaches to visual methods in mixed method research in psychological fields. *Methods in Psychology* 6, 100090. <https://doi.org/10.1016/j.metip.2022.100090>.
- Dalton, C., Mason-Deese, L., 2012. Counter (mapping) actions: mapping as militant research. *An International E-Journal for Critical Geographies* 11 (3), 439–466.
- Daya, I., 2022. Russian dolls and epistemic crypts: a lived experience reflection on epistemic injustice and psychiatric confinement. *Incarceration* 3 (2), 26326663221103444. <https://doi.org/10.1177/26326663221103444>.
- De Genova, N., 2013. We are of the connections': migration, methodological nationalism, and 'militant research. *Postcolonial Stud.* 16 (3), 250–258. <https://doi.org/10.1080/13688790.2013.850043>.
- De Genova, N., Roy, A., 2020. Practices of Illegalisation. *Antipode* 52 (2), 352–364. <https://doi.org/10.1111/anti.12602>.
- Dehm, S., 2020. *International Law at the Border: Refugee Deaths, the Necropolitical State and Sovereign Accountability* (No. ID 3619656. *Social Science Research Network, Rochester, NY*, pp. 1–21.
- Dijstelbloem, H., van der Veer, L., 2019. The multiple movements of the humanitarian border: the portable provision of care and control at the Aegean islands. *J. Borderl. Stud.* 0 (0), 1–18. <https://doi.org/10.1080/08865655.2019.1567371>.
- Esposito, F., 2021. Immigration detention and the Coloniality of gender. *Mélanges de La Casa de Velázquez. Nouvelle Série* (51–1), 271–275. <https://doi.org/10.4000/mcv.14768>.

- Esposito, F., Ornelas, J., Arcidiacono, C., 2015. Migration-related detention centers: the challenges of an ecological perspective with a focus on justice. *BMC Int. Health Hum. Right* 15 (1), 13. <https://doi.org/10.1186/s12914-015-0052-0>.
- Esposito, F., Matos, R., Bosworth, M., 2020. Gender, vulnerability and everyday resistance in immigration detention: Women's experiences of confinement in a Portuguese detention facility. *International Journal for Crime, Justice and Social Democracy* 9 (3), 5–20. <https://doi.org/10.5204/ijcjsd.v9i3.1588>.
- Esposito, F., Ornelas, J., Scirocchi, S., Tomai, M., Di Napoli, I., Arcidiacono, C., 2021. “Yes, but somebody has to help them, somehow:” looking at the Italian detention field through the eyes of professional Nonstate actors. *Int. Migrat. Rev.* 55 (1), 166–194. <https://doi.org/10.1177/0197918320921134>.
- Faist, T., 2012. Toward a transnational methodology: methods to address methodological nationalism, essentialism, and positionality. *Rev. Eur. Des. Migr. Int.* 28 (1), 51–70. <https://doi.org/10.4000/remi.5761>.
- Fetters, M.D., Curry, L.A., Creswell, J.W., 2013. Achieving integration in mixed methods designs—principles and practices. *Health Serv. Res.* 48 (6pt2), 2134–2156. <https://doi.org/10.1111/1475-6773.12117>.
- Fielding, N.G., 2012. Triangulation and mixed methods designs: data integration with new research technologies. *J. Mix. Methods Res.* 6 (2), 124–136. <https://doi.org/10.1177/1558689812437101>.
- Flynn, M.J., Global Detention Project, 2014. How and Why Immigration Detention Crossed the Globe. <https://www.globaldetentionproject.org/how-and-why-immigration-detention-crossed-the-globe>. (Accessed 1 October 2022).
- Forensic Architecture, 2020. Pushbacks across the Evros/meric River: Situated Testimony. <https://forensic-architecture.org/investigation/evros-situated-testimony>. (Accessed 12 April 2021).
- Garelli, G., Tazzioli, M., 2017. Choucha beyond the camp: challenging the border of migration studies. In: De Genova, N. (Ed.), *The Borders of 'Europe'*. *Autonomy of Migration, Tactics of Bordering*. Duke University Press, Durham, pp. 165–184.
- Gieseking, J.J., 2013. Where We go from here: the mental sketch mapping method and its analytic components. *Qual. Inq.* 19 (9), 712–724. <https://doi.org/10.1177/1077800413500926>.
- Gill, N., Conlon, D., Moran, D., Burridge, A., 2018. Carceral circuitry: new directions in carceral geography. *Prog. Hum. Geogr.* 42 (2), 183–204. <https://doi.org/10.1177/0309132516671823>.
- Global Detention Project, 2023. Immigration Detention Centres. Mapping Immigration Detention Around the World. Global Detention Project. <https://www.globaldetentionproject.org/detention-centres/map-view>.
- Guetterman, T.C., Babchuk, W.A., Howell Smith, M.C., Stevens, J., 2019. Contemporary approaches to mixed methods—grounded theory research: a field-based analysis. *J. Mix. Methods Res.* 13 (2), 179–195. <https://doi.org/10.1177/1558689817710877>.
- Hellenic Republic Ministry of Migration and Asylum, 2021. Closed Controlled Access Center of Samos. <https://migration.gov.gr/en/nea-kleisti-elegchomeni-domi-samo-y-enimerotiko/>. (Accessed 13 May 2023).
- Hennink, M.M., Kaiser, B.N., Marconi, V.C., 2017. Code saturation versus meaning saturation: how many interviews are Enough? *Qual. Health Res.* 27 (4), 591–608. <https://doi.org/10.1177/1049732316665344>.
- Hesse-Biber, S., 2012. Feminist approaches to triangulation: uncovering subjugated knowledge and fostering social change in mixed methods research. *J. Mix. Methods Res.* 6 (2), 137–146. <https://doi.org/10.1177/1558689812437184>.
- Hooks, G., Lengefeld, M., 2022. Callous cruelty and Blow Back: immigration and Customs enforcement facilities, riskscape, and community Transmission of COVID-19. *Environ. Justice* 15 (1), 39–57. <https://doi.org/10.1089/env.2021.0040>.
- I Have Rights, 2023. In: The EU-Funded Closed Controlled Access Centre—The De Facto Detention of Asylum Seekers on Samos. https://ihaverights.eu/de_facto_detention_in_the_ccac/. (Accessed 17 May 2023).
- Johnson, R., McGowan, M., Turner, L., 2010. Grounded theory in practice: is it inherently a mixed method? *Psychol. Sch.* 13, 65–78.
- Judge, N., Loughnan, C., 2022. Witnessing violence: stories from a migration support worker. *Incarceration* 3 (2), 26326663221103440. <https://doi.org/10.1177/26326663221103442>.
- Kelly, J.G., 2006. *Becoming Ecological: an Expedition into Community Psychology*. Oxford: Oxford University Press, USA.
- Kitchin, R.M., 1994. Cognitive maps: what are they and why study them? *J. Environ. Psychol.* 14 (1), 1–19. [https://doi.org/10.1016/S0272-4944\(05\)80194-X](https://doi.org/10.1016/S0272-4944(05)80194-X).
- Kizilhan, J.I., Noll-Hussong, M., 2020. Psychological Impact of COVID-19 in a Refugee Camp in Iraq. <https://doi.org/10.22028/D291-33374>.
- Knigge, L., Cope, M., 2006. Grounded visualization: integrating the analysis of qualitative and quantitative data through grounded theory and visualization. *Environ. Plann.: Econ. Space* 38 (11), 2021–2037. <https://doi.org/10.1068/a37327>.
- Levitt, H., Bamberg, M., Creswell, J., Frost, D., Josselson, R., Suárez-Orozco, C., 2018. Journal article reporting standards for qualitative primary, qualitative meta-analytic, and mixed methods research in psychology: the APA publications and communications board Task force report. *Am. Psychol.* 73, 26–46. <https://doi.org/10.1037/amp0000151>.
- Lo Presti, L., 2019. Terraqueous necropolitics: unfolding the low-operational, forensic, and Evocative mapping of Mediterranean sea Crossings in the Age of Lethal borders. *ACME: An International Journal for Critical Geographies* 18 (6), 1347–1367.
- Lorde, A., 2018. *The Master's Tools Will Never Dismantle the Master's House*: Audre Lorde, first ed. Penguin Classics, München.
- Loughnan, C., 2022. The scene and the unseen: Neglect and death in immigration detention and aged care. *Incarceration* 3 (2), 26326663221103444. <https://doi.org/10.1177/26326663221103444>.
- Maggio, J., 2007. “Can the subaltern Be heard?”: political theory, Translation, representation, and Gayatri Chakravorty spivak. *Alternatives* 32 (4), 419–443. <https://doi.org/10.1177/030437540703200403>.
- Maillet, P., Mountz, A., Williams, K., 2017. Researching migration and enforcement in obscured places: practical, ethical and methodological challenges to fieldwork. *Soc. Cult. Geogr.* 18 (7), 927–950. <https://doi.org/10.1080/14649365.2016.1197963>.
- Majdzadeh, B., 2019. Mnemonic cartography of violence. *Studia Universitatis Babeş-Bolyai - Dramatica* 64 (2), 119–128.
- Malagon, M.C., Huber, L.P., Velez, V.N., 2009. Our experiences, our methods: using grounded theory to Inform a critical race theory methodology Education & pedagogy. *Seattle Journal for Social Justice* 8 (1), 253–272.
- Manek, J., Fernández de la Reguera, A., 2022. Mapping Migration Detention: Ein psycho-geographisches Countermapping von opaken Institutionen am Beispiel der „Estaciones Migratorias“ in Mexiko. In: Michel, B., Dammann, F. (Eds.), *Kapitel Handbuch Kritisches Kartieren*. transcript Verlag, Bielefeld, pp. 55–70. <https://doi.org/10.1515/9783839459584-004>.
- Manek, J., Galán-Santamarina, A., Pérez-Sales, P., 2022. Torturing environments and multiple injuries in Mexican migration detention. *Humanities and Social Sciences Communications* 9 (1), 1–16. <https://doi.org/10.1057/s41599-022-01252-y>.
- Manek, J., Bird, G., Galán-Santamarina, A., 2023. Closed. Confining. Torturing? the Construction of Torturing Environments in Samos' Hotspot Camps. <https://blogs.law.ox.ac.uk/blog-post/2023/03/closed-confining-torturing-construction-torturing-environments-samos-hotspot>. (Accessed 8 May 2023).
- Marchese, G., 2019. Del cuerpo en el territorio al cuerpo-territorio: Elementos para una genealogía feminista latinoamericana de la crítica a la violencia. *EntreDiversidades* 6 (2), 9–41. <https://doi.org/10.31644/ED.V6.N2.2019.A01>, 13.
- Martin, L., Mitchelson, M.L., 2009. Geographies of detention and imprisonment: Interrogating spatial practices of confinement, discipline, law, and state power. *Geography Compass* 3 (1), 459–477. <https://doi.org/10.1111/j.1749-8198.2008.00196.x>.
- Massey, D., 1984. Introduction: geography matters. In: Massey, D., Allen, J. (Eds.), *Geography Matters!*, first ed. Cambridge University Press, pp. 1–11. <https://doi.org/10.1017/CBO9781139167833.001>. By J. Anderson, S. Cunningham, C. Hamnett, & P. Sarre.
- Mbembe, A., 2016. *Necropolitics*. Duke University Press.
- McGhee, G., Marland, G.R., Atkinson, J., 2007. Grounded theory research: literature reviewing and reflexivity. *J. Adv. Nurs.* 60 (3), 334–342. <https://doi.org/10.1111/j.1365-2648.2007.04436.x>.
- Médecins Sans Frontières, 2021. Constructing Crisis at Europe's Borders. The EU Plan to Intensify its Dangerous Hotspot Approach on Greek Islands. Retrieved from. https://www.msf.org/wp-content/uploads/2021/06/msf_greece_report_en_03.pdf.
- Mijatović, D., 2018. Report of the Commissioner for Human Rights of the Council of Europe Dunja Mijatović Following Her Visit to Greece from 25 to 29 June 2018. Retrieved from. <https://rm.coe.int/report-on-the-visit-to-greece-from-25-to-29-june-2018-by-dunja-mijatovic/16808ea5bd>.
- Mountz, A., 2013. Political geography I: reconfiguring geographies of sovereignty. *Prog. Hum. Geogr.* 37 (6), 829–841. <https://doi.org/10.1177/0309132513479076>.
- Mountz, A., 2017. Island detention: Affective eruption as trauma's disruption. *Emotion, Space and Society* 24, 74–82. <https://doi.org/10.1016/j.emospa.2017.02.006>.
- Musarò, P., 2017. Mare Nostrum: the visual politics of a military-humanitarian operation in the Mediterranean Sea. *Media Cult. Soc.* 39 (1), 11–28. <https://doi.org/10.1177/0163443716672296>.
- Musioli, H., 2020. Cartographic storytelling, migration, and reception environments. *Environ. Space Place* 12, 1–30. <https://doi.org/10.5749/envispacplac.12.2.0001>.
- Nethery, A., Holman, R., 2016. Secrecy and human rights abuse in Australia's Offshore immigration detention centres. *Int. J. Hum. Right.* 20 (7), 1018–1038.
- O'Connor, C., Joffe, H., 2020. Intercode reliability in qualitative research: debates and practical guidelines. *Int. J. Qual. Methods* 19, 1609406919899220. <https://doi.org/10.1177/1609406919899220>.
- Pérez-Sales, P., 2016. *Psychological Torture: Definition, Evaluation and Measurement, Illustrated Edition*. Routledge, London ; New York.
- Pérez-Sales, P., 2018. Migration and torture: building a map of knowledge. *Torture Journal* 28 (2), 1–14. <https://doi.org/10.7146/torture.v28i2.106906>.
- Pérez-Sales, P., González-Rubio, R., Mellor-Marsá, B., Martínez-Alés, G., 2021. Beyond torture checklists: an exploratory study of the reliability and construct validity of the Torturing Environment Scale (TES). *BMC Publ. Health* 21 (1), 372. <https://doi.org/10.1186/s12889-021-10384-w>.
- Pérez-Sales, P., Galán-Santamarina, A., Zunzunegui, M.V., López-Martin, S., 2022. Refugee camps as torturing environments—an analysis of the conditions in the Moria reception center (Greece) based on the torturing environment scale. *Int. J. Environ. Res. Publ. Health* 19 (16), 10233. <https://doi.org/10.3390/ijerph191610233>.
- Pérez-Sales, P., Galán-Santamarina, A., Manek, J., 2023. Torturing environments and migration. *Society and Societal Transformation | Società e Trasformazioni Sociali* 10, 71–92. <https://doi.org/10.30687/978-88-6969-635-0>.
- Peterie, M., 2022. *Visiting Immigration Detention: Care and Cruelty in Australia's Asylum Seeker Prisons*. Policy Press.
- Pugliese, J., 2008. The Tutelary architecture of immigration detention prisons and the spectacle of 'necessary suffering'. *Architect. Theor. Rev.* 13 (2), 206–221. <https://doi.org/10.1080/13264820802216841>.
- Russell, E.K., de Souza, P., 2023. Counter-mapping the mobile border: Racial surveillance and data justice in spaces of disappearance. *Environment and Planning D: Society and Space* 41 (3), 494–512. <https://doi.org/10.1177/02637758231179224>.
- Samos Advocacy Collective & Europe Must Act, 2022. “All I Want Is to Be Free and Leave” Life in the Samos Closed Controlled Access Centre—Greece. <https://reliefweb.int/report/greece/all-i-want-be-free-and-leave-life-samos-closed-controlled-access-centre>. (Accessed 2 May 2022).

- Scott, K.W., 2004. Relating categories in grounded theory analysis: using a conditional relationship Guide and reflective coding Matrix. *Qualitative Reports* 9. <https://doi.org/10.46743/2160-3715/2004.1940>.
- Shim, M., Johnson, B., Bradt, J., Gasson, S., 2021. A mixed methods-grounded theory design for producing more refined theoretical models. *J. Mix. Methods Res.* 15 (1), 61–86. <https://doi.org/10.1177/1558689820932311>.
- Silverman, S.J., Nethery, A., 2015. Understanding immigration detention and its human impact. In: Nethery, A., Silverman, S.J. (Eds.), *Immigration Detention: the Migration of a Policy and its Human Impact*. Routledge, New York, pp. 1–12.
- Silvey, R., 2004. Power, difference and mobility: feminist advances in migration studies. *Prog. Hum. Geogr.* 28 (4), 490–506. <https://doi.org/10.1191/0309132504ph490oa>.
- Sin Fronteras, 2019. In: La detención migratoria: Un análisis desde el modelo penitenciario y el gasto público. https://sinfronteras.org.mx/wp-content/uploads/2019/03/Detencion_Migratoria.pdf. (Accessed 1 October 2022).
- Spathopoulou, A., 2022. Mapping out the hotspot. In: Spathopoulou, A. (Ed.), *Bordering and Governmentality Around the Greek Islands*. Springer International Publishing, Cham, pp. 29–48. https://doi.org/10.1007/978-3-031-08589-5_2.
- Stenfors, T., Kajamaa, A., Bennett, D., 2020. How to assess the quality of qualitative research. *Clin. Teach.* 17 (6), 596–599. <https://doi.org/10.1111/tct.13242>.
- Stierl, M., 2020. Do no harm? The impact of policy on migration scholarship. *Environ. Plan. C Politics Space*, 2399654420965567. <https://doi.org/10.1177/2399654420965567>.
- Strauss, A.L., Corbin, J.M., 1996. *Grounded Theory: Grundlagen Qualitativer Sozialforschung*. Beltz, Psychologie-Verlag-Union, Weinheim.
- Strous, R.D., Jotkowitz, A., 2010. Ethics and research in the service of asylum seekers. *Am. J. Bioeth.* 10 (2), 63–65. <https://doi.org/10.1080/15265160903506400>.
- Tazzioli, M., 2015. Which Europe? Migrants' uneven geographies and counter-mapping at the limits of representation. *Journal for Critical Migration and Border Regime Studies* 1 (2). <http://movements-journal.org/issues/02.kaempfe/04.tazzioli-europe-migrants-geographies-counter-mapping-representation.html>.
- Teigler, L., Löhne, S., Slaby, J., 2015. Eine kritische Analyse des Konzeptes »appetitive Aggression«. *Wissenschaftliche Schwierigkeiten in der Trauma und Gewaltforschung und ihre politischen Konsequenzen. Psychosozial* 142, 25–43.
- van Houtum, H., Lacy, R.B., 2020. The migration map trap. On the invasion arrows in the cartography of migration. *Mobilities* 15 (2), 196–219. <https://doi.org/10.1080/17450101.2019.1676031>.
- Welch, M., Schuster, L., 2005. Detention of asylum seekers in the UK and USA: Deciphering noisy and quiet constructions. *Punishm. Soc.* 7 (4), 397–417. <https://doi.org/10.1177/1462474505057117>.
- Wolf, S., 2013. Migration Detention in Mexico: Accountability Limitations as a Factor for Human Rights Violations. Retrieved from. <https://ru.iis.sociales.unam.mx/handle/IIS/5404>.