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Data circulation and the (re)configuration of European migration and border control. A praxeographic inquiry into the information infrastructure of the Frontex Joint Operation Poseidon

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Dissertation

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Cumulus of the dissertation

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Cumulus of the dissertation

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Abstract

This dissertation develops an approach of border control information infrastructures that is strictly relational and processual. Instead of thinking infrastructures as coherent, stable and robust structures that produce a seamless flow of data, it sheds light on the ongoing activities and processes that create and keep data circulation running. Making data circulation to a concern of inquiry thus turns the focus to the practices and processes of *infrastructuring*. Based on a multi-sited ethnography, all the papers assembled in this cumulative dissertation produce multiple flat, complex and symmetrical accounts on the inter-organizational and transnational migration and border control information infrastructure of the Frontex Joint Operation Poseidon (1). They do so by developing a praxeographic research approach that studies situated practices, socio-material arrangements that condition situations and enfolding practices, and practices and devices of coordination that go beyond a particular situation (2). With this, the papers contribute to and complexify the optics recent work at the intersection of STS and critical migration and border studies has developed (3): By "zooming in" and closely following actors, data and devices, the papers carve out spatial, temporal and organizational modes that bring data circulating across installed bases of EU and nation state authorities into being. By recalibrating the focus from the functioning of infrastructures to their frictions and turbulences, the papers do not only point at failures and break-downs but also study their productivity for an ongoing process of infrastructural (re)ordering. By analysing the mutual shaping of data and border practices, the papers provide insights into the coproduction of information infrastructures and the contemporary European migration and border regime and shed light on a European data space, which is heterogeneous and fragmented. Finally, the cumulus sketches out a certain type of an information infrastructure of European migration and border control that is provisional, low-tech and partly standardized and that produces systematic forms of ignorance and convoluted accountability (4).

1 Situating European migration and border control information infrastructures

1.1 The case

The dissertation conducts an in-depth analysis of the information infrastructure of the Frontex Joint Operation Poseidon. The Frontex Joint Operation Poseidon is a border operation that carries out a wide range of border activities at the Aegean Sea. In collaboration with the Hellenic Police and the Hellenic Coast Guard as well as with border agencies from EU member states, Frontex coordinates mixed border guard units. Those units carry out aerial, sea and land patrol missions, detect boats crossing the sea borders from Turkey to Greece in the Aegean Sea, take part in search and rescue missions, transport arrivals to registration and identification centers, identify and fingerprint migrants at the Hotspots on the Aegean Islands, check on forged documents, gather information regarding smuggling, human trafficking and migratory routes for risk analysis and organize readmission operations. During the border operations, a lot of reports are written and a multitude of data is generated. In shift, debriefing, incident, intelligence, national official, ICC coordinator and other reports data on so called border crossing incidents, migrant populations, "push-factors", final destinations, migratory routes, smuggling and money transfer networks and more is collected, processed and distributed not only to Frontex but also to several headquarters of national police and coast guard authorities.

The dissertation focuses on an information infrastructure of European border control that has been neglected so far. Most of recent work on information infrastructures of European border control has studied mainly large-scale information systems, such as Eurodac, the Visa Information System or the Schengen Information System II. Those systems are highly regulated through EU policies, maintained and further developed by the EU agency eu-LISA and equipped with technological and semantic standards as well as with gateways between central national systems.

In contrast to such systems, the information infrastructure of the Frontex joint operations builds upon many different installed bases and deals with many changing partners and actors. For instance, police and coast guard units from EU member states are deployed to a Frontex joint operation for some months at most with the consequence of ever changing constellations of border and security actors. Although data is processed and distributed across organizational boundaries, it is neither achieved by one single system used by all (Hanseth & Monteiro, 1998), nor by a "system-of-sytems" that integrates various information systems. Instead, many different information systems, many installed bases, and many reporting and information channels exist next to each other and are used in parallel and at the same time.

Interconnecting administrations and information systems, harmonising classification sets, and coordinating distributed data practices across multi sites thus cannot be taken for granted but are subject to extensive work, struggles and institutional reorderings. With a focus on infrastructur*ing*, this dissertation studies the practices and processes of aligning, interconnecting and harmonising by making tensions, frictions and overflows to pivotal points of analysis.

1.2 Situating the dissertation in the debate around European border control information infrastructures

In the last two decades or so, information infrastructures of European migration and border control became the object of numerous critical inquiries and controversies. A growing, transdisciplinary body of literature explored the datafication of migration and border control (e.g. Broeders, 2007; Dijstelbloem & Broeders, 2015), and worked out how information infrastructures produce new rationales of control that assess international mobility in terms of risk (e.g. Amoore, 2006; Aradau et al., 2008), filtering and sorting (e.g. Broeders and Hampshire, 2013; de Goede et al., 2016) or pre-emption (e.g. Amoore, 2013; Tazzioli, 2018). Previous research also reflected upon how information infrastructures bring new border formations into being, ranging from the multiplication of borders (e.g. Guild & Bigo, 2005; Glouftsios, 2018), the spatiotemporal dispersion of borders (e.g. Walters, 2002; Vaughan-Williams, 2010) to entangled borders by interconnecting distant sites, centers and actors (e.g. Walters, 2017; Tazzioli & Walters, 2016) and various registers of governance and bureaucracy (e.g. Dijstelbloem & Broeders, 2015). It also hinted to the coproduction of information infrastructures and new actor-constellations including private security forms (e.g. Leander, 2010; Lemberg-Pedersen, 2013; Hayes & Vermeulen, 2012), tech-companies and data scientists (e.g. Johnson et al., 2011; Broeders & Dijstelbloem, 2016), non-state and non-governmental organizations and shifts in the European field of security (e.g. Bigo, 2014).

Still, in many of these accounts, 'technologies are taken as a "given", a linear and powerful implementation of a will to govern and control individuals and societies' (Bellanova & Duez, 2016, p. 25). Furthermore, many of the critical inquiries are limited to the conduct of human actors and do not take "things", technologies and devices conceptually and methodologically into account (Amicelle et al., 2015). Kuster and Tsianos criticize that a large part of this 'body of work elucidates how [information infrastructures] supposed to operate' (Kuster & Tsianos, 2013, p. 8) but not so much how information infrastructures are enacted and worked with in practice.

This is also reflected in the design of research inquiries that all too often collect and analyze policy and other documents or conduct interviews with policy makers and security actors. Ethnographic inquires that craft situated accounts on practices of designing, working with or maintaining European information infrastructures of migration and border control remain an exception. Only in 2019, Scheel, Ruppert, Ustek-Spilda (2019) called for more situated analysis that study data practices 'performed by humans in relation to materials, technologies and shared understandings' and those socio-technical arrangements 'that only come to matter by being used in practice' (Scheel et al., 2019, p. 583).

Situated and ethnographic accounts of European migration and border control information infrastructures may question the taken-for-grantedness of smooth, and real-time data processing, which all too often forms the basis of both enthusiastic and dystopian visions of a datafied and digitalized governance of migrant mobilities. They also may refuse to reify the imaginary of a "functioning" state apparatus that operates

orderly, justly and legitimately (Rozakou, 2017), or make the performativity of scientific accounts visible that help reenacting the state as an actor (Dijstelbloem & Pelizza, 2019).

In recent years a few contributions at the intersection of STS, critical migration and border and critical security studies have conducted situated analysis by focusing on practices of designing, working with or maintaining European migration and border control information infrastructures (see for instance Scheel et al., 2019; Glouftsios & Scheel, 2021; Leese, 2020; Hall, 2017; Glouftsios, 2020; Pelizza, 2020; van Reekum, 2019). For instance, based on an analysis of the Frontex information infrastructure Eurosur, Jean Jeandesboz has emphasized to study not only how information infrastructures and devices are deployed and used but also how they are *designed*. The sites of design 'can differ significantly from the sites where they are deployed' (Jeandesboz, 2017, p. 260) and it would be an important research endeavour to analyze 'the struggles and controversies involved in designing them'(Jeandesboz, 2017, p. 260). Simon Noori has conducted a dense study on the European Smart Border Package and worked out how technological matters - such as, which biometric technologies and solutions to choose, how many data categories to gather, what data requirements to define and which "users" to imagine - produced again and again contestations and problematizations, which also fired back to the legislation process (Sontowski, 2018). Kuster and Tsianos have conducted a remarkable case study about the *implementation and usage* of the information system Eurosur at various sites throughout the EU (Kuster & Tsianos, 2013; Glouftsios & Scheel, 2021). In a multi-sited ethnography they provided detailed insights of how police departments in Greece, Italy and Germany frame Eurodac differently, work with different devices and face different problems. By that, the researchers gave situated accounts of the socio-technical actor-networks at site that enacted borders differently (Kuster & Tsianos, 2013). And Glouftsios and Bellanova de-blackboxed information infrastructures of migration and border control by focusing on practices of *repair and maintenance*. Based on a study on the Schengen Information System (SIS II), they directed their empirical focus to the administrators, data scientists and IT-experts working at the EU agency eu-LISA and showed how those people seek to control various sources of failures, issues of data quality and end-users' behaviours. A functioning system thus is the unstable result through maintenance (Bellanvoa & Glouftsios, 2020).

Such work offers valuable access points to question the *functioning* of information infrastructures. This dissertation builds upon this work, but directs the focus of the inquiry even more consequently to the activities and processes of *infrastructuring* of information infrastructures and the power effects it generates. Infrastructuring - as a gerund, not a noun - refers to an understanding of the relational, heterogenous and contested nature of large scale infrastructural setups. As Susan Leigh Start puts it: 'one person's infrastructure is another's topic, or difficulty' (Star, 1999, p. 380), or 'one person's infrastructure is another's brick wall, or in some cases, one person's brick wall is another's object of demolition.' (Star, 2002, p. 16). A focus on infrastructuring means asking how various data practices scattered across multiple sites and conducted by many actors from different organizations enact something like a shared data space, in which data can be exchanged and circulated. Not only the conditions of possibility of single data practices but also their coordination and alignment are the object of inquiry (Latour, 2005). This is in line with recent work in

the realm of infrastructure studies that has emphasized to study the complexities of infrastructures by looking at the activities, heterogeneous entanglements and ongoing enfolding of an infrastructure (Harvey et al., 2016).

With this, the dissertation develops an approach of border control information infrastructures that is strictly relational and processual. Instead of thinking infrastructures as coherent, stable and robust structures that produce a seamless flow of data, it focuses on the practices and processes of infrastructuring and analyzes how data across sites and installed bases is brought to circulation. It does so by developing a praxeographic research approach that studies situated actions, socio-material arrangements that condition situations and enfolding practices, and practices and devices of coordination that go beyond a particular situation.

Based on a multi-sited ethnography, the papers of this cumulative dissertation produce multiple flat, complex and symmetrical accounts of the inter-organizational and transnational migration and border control information infrastructure of the Frontex Joint Operation Poseidon. Like a prism they shed light on and follow multiple actors, sites, lines, practices, and orderings and trace their alignment, coordination and monitoring. With this, the papers complexify the optics on migration and border control information infrastructures that recent work at the intersection of STS and critical migration and border studies has developed (Haraway, 1988): By zooming in, they carve out spatial, temporal and organizational modes of infrastructuring that process data across installed bases of EU and nation state authorities. By recalibrating the focus from the seamless functioning to the turbulent reconfigurations of information infrastructures, they look at the productive role of inconsistencies (Harvey et al., 2016), fragilities (Denis & Pontille, 2015) and frictions (Edwards, 2010; Edwards et al., 2011) and study all the forms of 'adapting, tailoring, appropriating, tuning, modifying, tweaking, making, fixing, monitoring, maintaining, repairing, hacking, vandalizing and instrumenting' (Karasti & Blomberg, 2018, p. 239) that they unfold. And by analyzing the mutual shaping of data and border practices, the papers provide insights into the coproduction of information infrastructures and the contemporary European migration and border regime and shed light on a European data space, which is heterogeneous and fragmented.

After introducing the information infrastructure of the Frontex Joint Operation Poseidon and outlining the scopes of the papers being part of the dissertation (II), the cumulus will tackle some methodological problems the inquiry faced and explain the praxeographic research approach the dissertation has developed (III). Then, the cumulus will bring different strands together developed in the papers and point at some key findings (IV). Finally, the cumulus will sketch out a certain type of an information infrastructure of European migration and border control that is provisional, low-tech and partly standardized and that produces systematic forms of ignorance and convoluted accountability (V).

1.3 The papers

The cumulative format of the dissertation allows to shed light on different infrastructurings of data circulation in the realm of the Frontex Joint Operation Poseidon. The empirical inquiry started on Lesvos in

2016, where I conducted research at and around the Registration and Identification Center in Moria. When migrants strand on the Aegean islands, they are brought to those centers, where a screening team identifies them. Fingerprints are taken, a medical and a vulnerability screening is done and documents are handed out. At the end migrants are sorted into specific institutional tracks with different organizations that are held responsible.

In this procedure quite a number of representatives, databases, technologies and forms from various organizations are assembled. The paper *Infrastructuring European migration and border control: The logistics of registration and identification at Moria hotspot* (2019) conducts an in-depth analysis of the socio-technical arrangements of the Moria hotspot in Greece. Based on an ethnography including interviews with local administrators from the Registration and Identification Service, Médecins du Monde, Frontex and Hellenic Police and a collection of internal and publicly available planning, policy, and management documents and handbooks, this paper reconstructs how data on so called "irregular" migrants is created and entered in various databases. By focusing on the mundane practices at site, the paper works out a mode of infrastructuring that moves migrants through the procedure of identification and registration, while at the same time coordinating the work of various administrations and interconnecting different information systems. In the following, the shortcut for this paper is '*Infrastructuring Moria'*.

The paper *Mapping European Border Control: On Small Maps, Reflexive Inversion and Interference* (2020) deepens this account and enfolds various dimensions of this infrastructuring process at the Moria hotspot. It hints to the tensions and struggles the different organizations working together at site have with each other, shows how the circulation of data is accompanied by the circulation of forms and people, and assembles a number of issues and critiques which became virulent in this socio-technical arrangement. In the following, the shortcut for this paper is '*Mapping Moria'*.

When I conducted research at and on the registration and identification center in Moria, I realized that there were even further data channels at place that not only created and processed data to Hellenic authorities but also to the Frontex headquarters. So called debriefers, police investigators, collect data on "push-factors" that make persons "leave the countries", on the background of new arrived migrants, on travel routes, and on the facilitator networks . Such data are entered into an online template of the Frontex information system *Processing of Personal Data for Risk Analysis (PeDRA)* and sent to the Frontex Risk Analysis unit in Warsaw.[1]

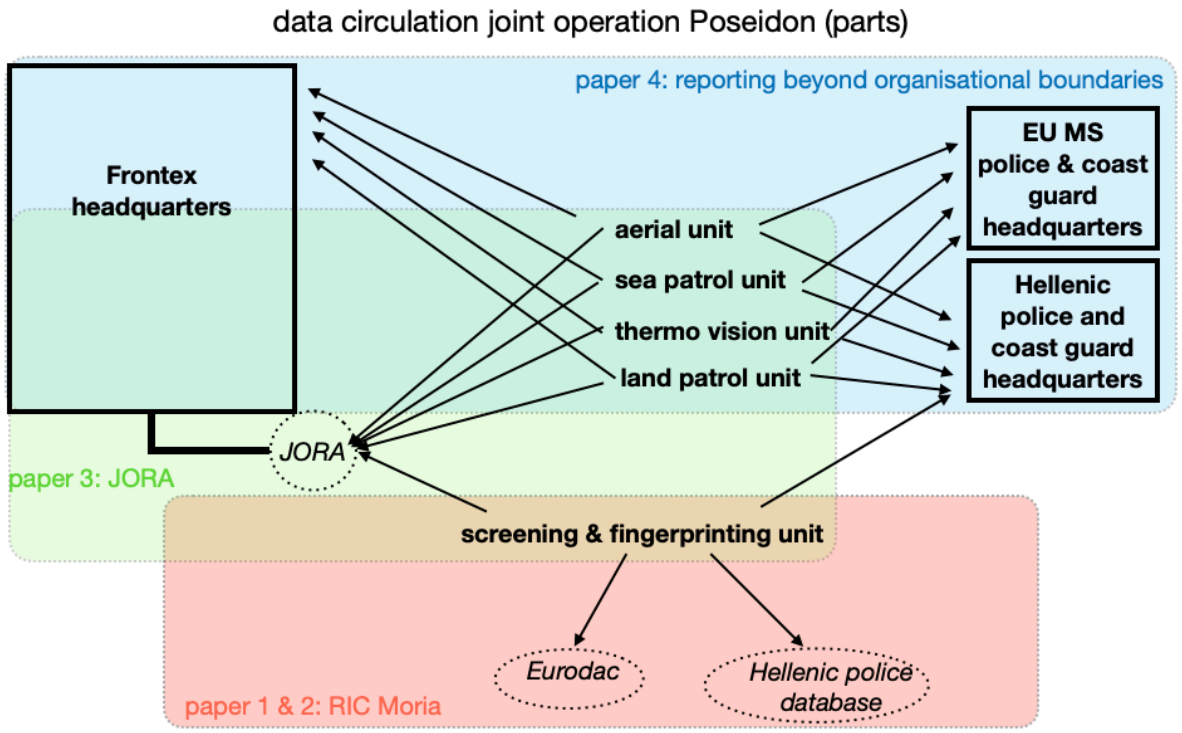
Furthermore, data on fraudulent documents as well as on cohorts of new arrivals collected by Frontex screeners and fingerprinters are forwarded to the Frontex headquarters via the Frontex information system *Joint Operation Reporting Application (JORA)*. When I followed this trajectory of data processing, I was confronted with many more border guard units and border sites. Aerial, thermo vision, sea patrol and land patrol also gather data for and fed data into the information system JORA. The paper *Turbulences of*

[1] Although a paper draft that details out this trajectory of data processing has already been crafted and waits for publication, it has not been included into the dissertation.

speeding up data circulation. Frontex and its crooked temporalities of 'real-time' border control (2020) studies in detail this distributed practice of data creating and processing. It shows how so-called Frontex incident reporter collect different datasets, create so-called "border-crossing incident" and then forward those to the Frontex Situation Center, which is also based in Warsaw. This paper focuses on the complex coordination work of the Frontex incident reporters, works out the clash of various temporalities, and points to some 'sources of turbulence' (Cresswell & Martin, 2012) that turn smooth and real-time data flows into a crooked process of data creation. In the following, the shortcut for this paper is '*Turbulence JORA*'.

Diving into the practices and procedures of incident reporting again made me realize that the border guard units additionally produce many other reports. Technical equipment mission reports, thermo vision vehicles reports, team leader's daily reports, reports on screening and fingerprinting, land patrol shift reports, LCC daily reports, intelligence reports, national official reports, ICC coordinator reports and other reports are created on a daily and/or weekly basis. Altogether with the data entries within various databases, they are crucial for the fabrication of knowledge of Europe's external borders.

The paper *Zirkulation, infrastrukturelle Bahnung, Schaltstellen. Europäische Grenzkontrolloperationen und die Koordination interorganizationaler Berichtsflüsse* (2020) conducts an in-depth analysis of those reports and their channels of circulation. It works out how reports are turned into immutable mobiles through standardization and templatization and how itemization makes it possible to apply them for different contexts of use. Furthermore, the paper argues that reports have to be understood as "technologies of accountability" (Suchman, 2002) that (re)produce hierarchies and responsibilities within and between organizations while circulating. This is why, most of the reports require certain switching points that transfer reports from one organizational channel into another. The paper carves out three different types of switching



points that coordinate the circulation of the reports across national and EU organizations. In the following, the shortcut for this paper is *'Switching points'*.

2. Researching European migration and border control information infrastructures - methodological considerations

Before we dive into the papers, we will develop and reflect upon the methodological approach of this inquiry. All the papers make an effort to develop accounts on information infrastructures that are attentive to practice, symmetry, heterogeneity and multiplicity. However, such an approach faces various challenges when it comes to European migration and border control: The researcher has to deal with multiple forms of secrecy, with the heterogeneous and invisible nature of information infrastructures, and with practices and processes of data circulation that are highly messy and in constant change. The following chapter addresses these questions. It outlines a relational understanding of secrecy and suggests a multidirectional research inquiry, sketches out a praxeographic approach that is able to trace multiple dimensions and lines of data circulation, and develops various forms of mapping that help navigating and reflecting upon the research process.

2.1 Methodological challenges - secrecy, invisibility, messiness

Approaching this very field of migration and border control is especially challenging because of *gatekeeping and secrecy*. Actors involved in the Frontex Joint Operation Poseidon, such as Frontex, police authorities, and coast guard authorities, act as gatekeepers to the institutional ecology of migration and border control. They may deny researchers to talk to their employees, to visit departments or to get details of information systems (Mountz, 2007). It may also happen that they do not affirmatively deny access but simply not respond to requests. Or in other cases, requests are not refused but the researcher may be directed to another department - and this goes on for quite some months or even years until the researcher finds the 'right' contact point in a big organization or simply a person who is willing to support the research project (Lippert et al., 2016).

Security agencies may also hinder researchers to get access to documents. Reports may be classified as 'limited' and be accessible only to selected actors. In regard to the Joint Operation Poseidon, for instance the main part as well as the specific annex of the Frontex Operational Plan - which is the binding agreement between the stakeholders - were only available to authorities of the EU member states categorized as "Law Enforcement", or to further actors on a "need-to-know basis"(Frontex ICC coordinator, 2018). Released documents also may be censored, as this is often the case in regard to Frontex reports with many paragraphs or even whole pages being blackened.

Furthermore, when some contact to representatives, administrational staff or "field site officers" of an organization has been achieved, it might happen that those interlocutors are concerned about their reputation

and stick to very "officious" stories, descriptions and explanations of their work, of the tasks and roles of their organization, or of recent events that are in line with published reports, statements or policy documents (Lippert et al., 2016). The interlocutors also might refuse to speak about particular topics or tell and show things explicitly "off the record". It also may happen that they recheck with their supervisor after a meeting, and the researcher is not permitted to use the record of an interview or a copy of a document. How to deal with such barriers and different forms of secrecy in the field of migration and border control throughout the research process?

A *second methodological challenge* of this research project is the extensive, heterogeneous, and to a great extent invisible nature of information infrastructures (Karasti & Blomberg, 2018). As Edwards et al. point out, information infrastructures can be understood as orderings that align and interconnect 'numerous systems, each with unique origins and goals [...] by means of standards, socket layers, social practices, norms, and individual behaviors' (Edwards et al., 2013, p. 5). They are not fully coherent, deliberately engineered or end-to-end processed systems but modular, multi-layered, rough-cut things and an unfinished work in progress (Edwards et al., 2009). Bowker et al. suggest to think 'about infrastructure not only in terms of human versus technological components but in terms of a set of interrelated social, organizational, and technical components or systems [that] emerges for people in practice, connected to activities and structures' (Bowker et al., 2009, p. 99).

Work from infrastructure studies have stressed a relational understanding of information infrastructures. They become an infrastructure for somebody, when they are '"just there", ready-at-hand, completely transparent' (Bowker et al., 2009, p. 99) and when something else can "run" or "operating" upon it. Those approaches emphasize the "taken-for-granted" aspect of infrastructure and highlight that infrastructures mostly and for most of the time remain invisible - until they break down (Star & Ruhleder, 1996). Unpacking information infrastructures thus requires an "infrastructural inversion" (Bowker, 1994), that is to go backstage and to study all the (often) invisible and complex work of designing, implementing or maintaining with all the 'political, ethical, and social choices' (Bowker et al., 2009, p. 99) that are made in those processes.

However, this is a challenging task to do. Technologies and their inscriptions of rules, norms, classifications and programs of action are blackboxed (Latour, 1990, 1994) and field actors themselves using an infrastructure might not be interested in their functioning as long as they work (Star & Ruhleder, 1996). Moreover, the researcher needs to study 'boring and unexciting things' including bureaucratic forms, technical specifications, classification systems and standards (Star, 1999), administrational sites and bureaucratic procedures. Such 'boring things' are not only difficult to approach but also difficult to understand as they require 'technical knowledge and expertise' and the researcher needs to be prepared to go through all kind of technical details without 'drowning' (se Goede, Bosma & Pallister-Wilkins, 2019, p. 15). Furthermore, the research has to take into account that many of the materials she collects do not reveal but presuppose knowledge of the institutional ecology in which they are embedded (Garfinkel, 1967; Star &

Ruhleder, 1996). How to deal with the extensive, heterogeneous, and to a large extent invisible nature of an information infrastructure and how to decompose it through infrastructural inversion?

The *third methodological challenge* is the messiness and dynamics especially the field of European migration and border management enfolds. The set-up of the Frontex Joint Operation Poseidon was messy and highly dynamic from the very beginning. The involved border agencies and the border guard units changed every some months and with them also the interlocutors I was in contact with. The very situation at the Aegean Sea between Turkey and the Aegean islands as well as on the Aegean islands themselves between 2016 and 2018 produced all kind of overflows that turned migration and border management into a provisional form of "pop-up governance" (Papada et al., 2019). Socio-technical arrangements, for instance the registration and identification center at the Moria hotspot on Lesvos, were constantly rebuilt, responsible officials and non-state and non-governmental organizations were replaced, containers rearranged, and procedures redefined. This messy and dynamic field of research made it difficult to work out the orderings of the information infrastructure of the Frontex Joint Operation Poseidon and to keep track on all its changes and reconfigurations.

Furthermore, the interconnection between how-to-manuals, standard operation procedures, working forms, classification sets, or accounts of officials on the one hand and the bureaucratic and border control practices on the ground on the other hand could not be taken for granted. How were actors, sites and organizations interconnected, how were data and forms brought to circulation, and did the shaping of the information infrastructure somehow allowed to work through gaps, frictions and inconsistencies in one way or another? Reporting templates I collected elsewhere within the institutional ecology supposed to be but were not used in the border operations. Sometimes no, sometimes several versions of a reporting template were used, or they were in use not anymore (*Mapping Moria*). Sometimes, due to the overcrowding of the camp or other reasons, identification procedures were suspended or postponed, or because of the breakdown of the internet connection data transfer to Hellenic or EU databases was interrupted (Kuster & Tsianos, 2013).

Hence, the relations between sites, actors, practices and materials throughout space and time turned out to be precarious and put itself into the center of the empirical inquiry (Latour, 2005). Moreover, gaps between social arenas (e.g. between policy making and carrying out a border operation) and organizational sites (e.g. between the headquarters or higher officials and street-bureaucrats) made me wonder how street-level bureaucrats and border guards achieved (or not) to adapt their actions to the messiness, the convolution and the overflows at site while at the same time keeping running (or not) the circulation of forms, data and people according (or not) to procedures, rules and policies.

The highly messy and dynamic field of research also brought another methodological problem on the table. John Law and others have emphasized to understand methods as devices that performatively enact an ordered social world and produce accounts of the social, as well as its components and attributes (Law & Ruppert, 2013). Hence, research ought to be attentive to 'hygiene' effects and reflexive about a too "clean" and "clear" research design' (Aradau et al., 2015, p. 4). Particularly this case study with its many gaps,

frictions and inconsistencies asks for methods that would help to navigate through such a terrain while at the same time being attentive to the multiple enfolding lines and enactments of an information infrastructure, as well as to the in- and exclusions the research process itself produces (see *Mapping Moria*). But how should one navigate not only through a messy and dynamic field of research but also through a research process, in which many different traces and trajectories could be followed, many voices in- or excluded, and many strands could be brought together?

The following sections will outline how this dissertation addresses secrecy in the field of European migration and border control, complexity and invisibility of information infrastructures, and messiness and dynamic reconfigurations of the institutional ecology of the Frontex Joint Operation Poseidon. They will turn secrecy into a productive lens for the research process, develop a praxeographic approach that disentangles multiple lines of the information infrastructure of Frontex Joint Operation Poseidon, and introduce a mapping approach, which is attentive to complexity, symmetry and multiplicity as well as to the ordering effects that methods themselves create.

2.2 A multi-sited and multi-directional research approach

Throughout the research process, I was confronted with different forms of secrecy that made it difficult to approach the institutional ecology of the Frontex Joint Operation Poseidon. Yet, instead of thinking secrecy as barriers that are to be overcome, secrecy can also be understood as a constitutive part of the social (Birchall, 2016a). In the last decade or so, work has problematized a too narrow gaze on secrets that neither questions its authority nor the authority of the possessor (Birchall, 2016b). Instead of fetishising secrets by thinking secrecy as hidden objects that have been intentionally concealed, it has been suggested to study codes and rites of secrecy as part of 'the mundane lifeworlds of security practices and practitioners' (de Goede, Bosma & Pallister-Wilkins, 2019, p. 14). This includes understanding secrecy relationally and studying it by being attentive to the positionings and struggles within the very field of research.

In the framework of the Frontex Joint Operation Poseidon, multiple forms of secrecy were enacted. For instance, representatives of Doctors of the World, the NGO conducting the medical screening at the Registration and Identification Center in Moria, were willing to schedule a meeting with me and to talk openly about the non-functioning of this arrangement while being cautious about their role in the politics of vulnerability and their contract with the Hellenic First Identification Service, which officially ran the camp. The UNHCR invited me to Moria camp management meetings but only allowed the recording of interviews with the press staff who is experienced in the crafting of stories for the public. The municipality of Mytilini again was eager to talk to me and criticized sharply the Hellenic government, the national police, the Hellenic asylum authority as well as the EU Commission and did not shy away with details of their (wrong) doings in the last months. Or Frontex allowed me to approach a number of Frontex officers who were often speaking quite openly to me about their work but were very careful in talking about their partners, especially the Hellenic police.

From this angle, secrecy might even become an instructive methodological tool. As part of a multi-sited ethnography - that does not separate the local "fieldsite" from the "abstract" and more global context but that traces the interconnections and trajectories of people, stories and objects across sites (Marcus, 1995) - secrecy may reveal a lot about the relations and positions between the different actors and their doings. My interlocutors had quite different understandings of what should (not) be said. While higher officials, who seemed to understand themselves primarily as the representatives of their authorities, were more concerned about aligning their stories with the official accounts of their organization, some field officers seemed to speak primarily from the position of a professional border guard and felt obliged to make things public that go against their notions of what 'good police work' is about (*Mapping Moria*). Some officers, such as a Frontex Operational Coordinator that I talked with several times, had an academic background and supported critical research on migration and border control, while other actors considered themselves as part of a "critical voice" on the current migration and border regime and provided valuable forms and documents to me. Hence, I came across many different forms and versions of secrecy, each of them giving hints to organizational, professional, and biographical backgrounds, to struggles between collective actors and to different forms of problematization and rationalization.

Working out the multiple forms of doing and undoing secrecy and relating them to the positions and relations to the institutional ecology of the Frontex Joint Operation Poseidon as part of a multi-sited ethnography also revealed the partiality of secrecy. The enactments of secrecy are partial not only because they are limited in reach or scope but also because they may be incoherent to each other (Jensen, 2007; Mol, 2002). As Dijstelbloem and Pelizza point out, the field actors themselves only have partial knowledge of the orderings and processes of a big institutional set-up like the Frontex Joint Operation Poseidon. They produce accounts from their very position - and they do so in the very interactions with the researchers (Dijstelbloem & Pelizza, 2019). The partiality of secrecy also hints to the active role researchers have in the construction of secrets: What is constructed as a secret is shaped by the access the researcher gets, the interactions she has with field actors as well as by the methods she uses (Latour, 2005). In this sense, analysing the various forms of boundary making of what, how, when and why something should remain secret and which role the researcher herself play is both a productive and necessary part in researching the field of European migration and border control.

2.3 Sampling

In order to assemble as many and diverse partialities of the information infrastructure of Frontex Joint Operation Poseidon, my empirical inquiry was based on three different logics of sampling. First, I sought to get insights into a *wide spectrum of data and border practices* by approaching as many officers as possible working in different realms of the Frontex Joint Operation Poseidon. I spoke with system administrators, service and information managers, and template developers dealing with the design, updating and maintenance of the information infrastructure. I talked to border guards from sea patrol, land patrol,

screening, fingerprinting, debriefing and other units who collected data in border operations. And I approached incident reporters, liaison officers, and coordinators who were concerned with the coordination of data practices and data transfer across organizations. The second sampling logic was to speak with *people having different positions within the hierarchy of organizations* from border guards and team leaders to national officials and directors of regional and national coordination centers. And finally, I reached out to *many different organizations* that were involved in the Frontex Joint Operation Poseidon in one way or another including non-state and non-governmental actors, national police and coast guard authorities, and EU agencies.

My aim was to craft a preliminary mapping that contoured the boundaries of my field of research and to get an idea of the sites, actors, technologies and practices I would focus on. In order to get a first overview of the organizations being involved in the Joint Operation and to sort out the different domains of its information infrastructure, I collected and analyzed newspaper articles, NGO and research reports, policy papers, and academic articles. Furthermore, I reached out to experts and researchers who have already been engaged with Frontex, Frontex information systems and Frontex Joint Operations. For instance, I reached out to Brigitta Kuster, Dimitrij Parsanoglou, Bernd Kasparek, Melina Antonakaki, Simon Noori, Sabrina Ellebrecht, and Vassilis Vlassis. In a preliminary desk research I also collected policy documents, calls for tender, description of information systems, standards, classification sets and other materials that were in one way or another concerned with the information infrastructure of the Frontex Joint Operation Poseidon.

When I reached out to migration and border agencies, I recognised that there were different logics of getting access. Frontex and police and coast guard authorities from EU member states *organized access centrally*. In most of the cases, I needed to contact the press office. They would check my request and then decide if and which kind of access should be granted to me. For all of these processes, I prepared an email entailing a summary of the research project, a more detailed description of the research project including a detailed request, as well as a recommendation letter from my supervisor. In each case, I tried to interrelate the scope of my research with the tasks and obligations of an agency and thus constantly rephrased the letters and the emails (Lippert et al., 2016). In various cases, I was invited to a meeting, which I mostly attended together with my supervisor, Prof. Jan-Hendrik Passoth. In the case of Frontex, for instance, we had a meeting with the head of the press office, in which we presented our research project, specified our requests and discussed the procedure of getting into contact with Frontex officers. In any case, we would always need to write a request to the press office, which then would make contact to a "proper" officer. Furthermore, the press office demanded to be put in cc in all further email exchange I would have with such Frontex officers. EASO, national police and coast guard authorities, and asylum agencies handled access in a similar way.

While Frontex organized more then twenty-five meetings with officers and employees from different domains and at different positions, other migration and border agencies were much more reluctant. For instance, it took two years of ongoing communication with the Hellenic police headquarters in order to get an invitation to a meeting with police officers and police coordinations being part of the Front Joint Operation Poseidon. The Hellenic Registration and Identification Service again welcomed my research and

scheduled a meeting with the head of the organization, which then was postponed several times. In the end and after five months of communication and changes of plans, I was referred to the regional office on Lesvos, where I was allowed to speak with the head of the Moria camp.

Approaching non-state and non-governmental organizations was tricky in a different way. When I tried to contact organizations from abroad being active on Lesvos, such as UNHCR, Metadrasi, Doctors of the World and others, I either did not find the right contact details or no one responded. In case I made contact to someone, it often happened that a meeting was refused due to the lack of resources and/or time. Consequently, I could only schedule a few meetings in advance. When I arrived on Lesvos, a further challenge then was to *find the places*, where such actors were based. As it turned out, bigger organizations, such as the Doctors Without Borders or the UNHCR, had regional offices in Mytilini, while other actors met at a particular place on a regular basis in order to discuss, plan and coordinate their activities. For instance, there was a weekly coordination meeting for all NGOs being active in the camps Moria and Klara Tepe that was publicly accessible. After introducing myself and attending several of those meetings, I managed to make contact to some of the representatives and to talk with them about their work. Furthermore, after having made contact to some of those actors, it became more and more easy to reach out to other NGOs. For instance, when I spoke to an UNHCR press officer, she offered to contact a representative from Metadrasi for a meeting with me, who then provided contacts to further NGOs to me. Hence, in this social arena access was organized rather in a snow-ball fashioned way.

Multi-sited ethnography (selection)	2x Lesvos, each 3 weeks in 11/2016; 04/2018 Joint Coordination Meetings Moria, RIC Moria, Local Coordination Center (LCC), Port Authority Mytilini, Local Police Department Mytilini, municipality of Lesvos, General Secretary of Aegean Policy, local UNHCR coordination center 3x Athens & Piraeus, each 1 week in 11/2016; 01/2017; 05/2017 EU Regional Task Force, Frontex Service Manager, Frontex Operational Commander, EASO Headquarters Greece, Hellenic Coast Guard Headquarters, International Coorcination Center (ICC) 1x Warsaw, 3 days in 05/2017 Frontex Headquarters, FSC
Problem-centered Interviews (selection)	Lesvos: EASO coordinator and press officer, MdM coordinator, UNHCR coordinators (2x) and experts (2x), Metadrasi coordinator, head of Iliachtida, municipality Mytilini, Frontex interpreter, Frontex land patrol, Frontex debriefer, Frontex press officer (2x), Frontex support officer, Frontex operational coordinator (2x), LCC coordinator (2x), LCC incident reporter, local police coordinators, RIS-Moria commander, RIS-Moria staff, coordinator Kara Tepe, Athens/Piraeus: Frontex Service Manager, Frontex Operational Commander, Frontex coordinator, ICC coordinator, ICC validator Warsaw: Frontex service manager, Frontex information manager Germany: Frontex screeners and fingerprinters (6x)
Document analysis (selection)	Working documents issued by Frontex, EASO, EU-Commission, Registration and Identification Service, Hellenic Police, Hellenic Coast Guard, UNHCR, and more

Between 2016 and 2018, I conducted fieldwork at various sites and conducted interviews with people from various organizations. During that time, I conducted thirty-nine problem-centered interviews between one and three hours with Frontex staff, Hellenic Police and Coast Guard officers, staff from other member state authorities as well as from non-state agencies, such as the UNHCR, Doctors of the World, or Metadrasi. Furthermore, I conducted in-depth interviews with people working on one way or another in the realm of the Frontex Joint Operation Poseidon.

2.4 Studying information infrastructures praxeographically

In the ongoing research process, I collected a mosaic of partial accounts of the information infrastructure of the Frontex Joint Operation Poseidon. The aim was not to construct an account of a coherent information infrastructure. Among other things that would mean to ignore all inherent forms of messiness, inconsistency and fragility and to silence critical voices that raised issues in regard to the design, implementation, usage and the ongoing reconfiguration of the information infrastructure in question. Rather, I wished to draw a flat and situated account that was attentive to complexity and multiplicity by focusing on data and border control practices at multi sites. As outlined in the paper *Mapping Moria,* I decided to draw on a praxeographic research approach. Praxeography is a variant of ethnography that

> focuses on situations but, by studying human and non-human entities in interaction and in a symmetrical way, [that] is more explicitly concerned with the socio-materiality and socio-technicality of a phenomenon. Meanings and identities are relevant regarding their effects on a particular practice as well as to the shaping of an entity or a social order (Sørensen & Schank, 2017, p. 412). Furthermore, praxeography not only traces multiple perspectives on a phenomenon but also studies the becoming of multiple phenomena realized by various enactments (Mol, 1999). An empirical inquiry thus makes multiple conditions of possibility visible, traces multiple configurations, agencies and options of an entity, and analyzes how those multiple becomings are related to each other (Knecht, 2013, p. 95). (*Mapping Moria, p.* 159)

I developed a praxeographic approach that would allow to conduct in-depth analysis of situations and to trace connections between them. Based on the heuristic of Gießmann et al. (2019), this approach includes, first, the focus on *situated action,* that is an analysis of a course of action and the enfolding of a situation. Scholars from the field of workplace studies (Luff et al., 2000) and from science and technology studies referring to ethnomethodology gave rich and precise accounts on the situational accomplishments of successfully aligning bodies, technologies, documents, scripts and other things in a here-and-now. Documents have to be related to a specific case, technologies need to be "de-scripted" (Akrich, 1992) in user contexts and might be "unready-to-hand" (Suchman, 1985, p. 37), or organizational procedures need to be adapted in the light of a specific problem. Focusing on situated action thus means to study in detail how technologies, devices and objects are related to the doings and sayings of the actors who are involved in the collection and circulation of data in the Frontex Joint Operation Poseidon. In acknowledging their expertise, knowledge and skills, field actors can provide valuable explanations, contextualizations, and details of the

technologies, devices and materials they work with and point to the "normal, natural troubles" (Garfinkel, 1967, p. 192) they face. By this, the researcher gets an understanding not only of objects and things as part of a situation but also of their status in regard to a certain practice.

Second, the approach analyzes technologies, devices and socio-material arrangements that *condition situations and enfolding practices* (Gießmann et al., 2019, p. 13). This includes hardware and software and standardised forms border guards need to deal with (e.g. fingerprinting machines, the Hellenic police database or reporting templates), the socio-material arrangement of a workplace (e.g. containers with its tables, chairs, etc.), and certain bureaucratic rules, procedures and mandates. In order to understand how situated actions are shaped and affected by technologies, devices and socio-material arrangements, the researcher needs also to be attentive to the inscription of rules, norms, classifications and programs of action into matter, devices and technologies (Latour, 1990, 1992). For instance, an information system defines input options, access rights and user roles, provides reminders, alerts, and deadlines, and addresses accountabilities (Woolgar, 1991).

Situations and enfolding practices are also framed by devices that proliferate "around" them. A lot of papers, reports, records, regulations, guidelines, requirement catalogues, standard operation procedures and the like are crafted and distributed in order to inform, update, regulate and coordinate practices of data collection and processing. Furthermore, there are all sorts of "learning devices", such as how-to manuals, handbooks, introductions of practitioners, briefings or workshops, that provide summaries, lists, figures and detailed explanations of how things typically work. With that, they also produce a normative account of how things should be done in this very organizational setup (Czarniawska, 2008). The Frontex Situation Center for instance has published a Frontex handbook and created a quite detailed description of the registration process and the usage of the different information systems in use in the Operational Plan.

Additionally, trained personnel seeks to control and shape the data practices of border guards by providing trainings and support. For instance, Product and Service Managers for the Frontex information system JORA from the Frontex Situation Center travel back and forth between different departments, personnel and sites, instruct new incident reporters or validators, pass on feedback regarding the performance of reporting and validating and ask the field officers and operational managers what information would be interesting to them (Frontex Service Manager 2017).

Third, the research approach traces the practices and mediators that go beyond a particular situation. Gießmann et al. (2019) stress the role of mediators and coordination practices that interconnect various situations (Suchman, 2011), create overviews about "bigger" contexts (e.g. Knorr-Cetina, 2009, 2014), transport knowledge across different sites and domains (e.g. Latour, 1990), and produce accountability in a web of distributed actors and activities (Suchman, 1993). In this context, Latour has emphasized to look out for sites, where trajectories of information are merged, duplicated, bifurcated or multiplied and where 'views of the (connected) whole are made possible' (Latour, 2005, p. 181). Those sites Latour calls oligopticons, which is a general term for different set-ups, such as command and control rooms, centers of calculation

(Latour, 1987) or coordination centers (Suchman, 1997). They are a knot in a web of various relations and actors, coordinate dispersed activities (Suchman, 2011) and monitor (selectively) the performance of actors via devices (Muniesa et al., 2007).

Such an approach, which analyzes situations and situated actions, the socio-technical arrangements and technologies that shape them, and mediators and practices that coordinate, interconnect and monitor distributed activities, provides a thick in-depth analysis of local sites including the doings and sayings of actors while at the same time studying how those sites are shaped by other sites, distant actors or past events. It also directs its attention to the practices, mediators and sites that keep multiple lines together and bring translocal orderings into being - which others might describe as meso-structures or large(r)-technical systems. However, it does so by sticking to the ground and taking complexity and multiplicity into account. Most importantly, such a "flat" approach on infrastructures is attentive to frictions, gaps, and inconsistencies: It can make visible how border guards work in improvised ways in preliminary and provisional workplaces (*Mapping Moria*), how forms or databases are error-prone (*Infrastructuring Moria*), or how the coordination of distributed activities is a crooked process and full of turbulences (*Turbulence JORA*). Instead of assuming coherent, stable and robust infrastructures, this research approach turns to the activities and processes of infrastructuring and works out different forms of tinkering and work-around, "ordered informality" (Hamani, 2014) and improvisational orders (Rozakou, 2017).

2.5 Navigating complexities - mapping as (b)ordering devices

Researching information infrastructures praxeographically faces the challenge of navigating complexities. When technologies, situations and practices are unpacked through situational analysis and multiple lines leading to other sites are traced, then it requires methods that might help keeping those multiple lines together throughout the research process. Even the analysis of only one socio-technical arrangement and its practices of creating and processing data makes navigation methods necessary. The socio-technical arrangement of the registration and identification center in Moria for instance assembles many different agencies and administrations that work together at site. As it turned out, those collective actors, along with their representatives, agendas and resources fought out struggles and created tensions on many levels. There were differing understandings of how good police work should look like, who should take the lead in border guard teams, how one should treat and support migrants, or which priorities should be set. Those contestations also let to other sites and arenas, such as to regional municipalities, national headquarters, or EU agencies and bodies. Moreover, when I studied the circulation of data at site, I realized that data flows went beyond organizational boundaries. This was related to the mobilization of forms going from hand to hand and to the containment of people in Moria. I recognised that there was a whole spatial and socio-material arrangement of containers, fences, corridors and waiting rooms in place that ordered various i/mobilities ranging from people to forms and datasets at once. Furthermore, when I followed the flows of data, I realized that the data was enacted and used differently at various sites. With a praxeographic research

approach, I tried to study the transformations or alternations data goes though in the ongoing processes of translation and the multiple contexts of use.

In the paper *Mapping Moria* I consider mapping a well-suited method for navigating complexities thought the research process. Drawing both on ontological methodology and Adele Clarke's work on situational analysis, it develops a mapping approach that studies the interplay of human and non-human entities within situations by situational maps, works out their modes of collaboration by social world maps, traces the circulation of humans, forms and data by trajectory maps, and assembles issues closely related to the situated practices by positional maps (Clarke, 2003, 2005). In order to question the (b)orderings of maps in a critical way and to keep their accounts contestable, the paper suggests an ongoing process of reflexive inversion that makes the boundaries of the mapping processes visible and uses the blind spots they produce for the (re)direction of the subsequent research process. In the end, it also asks, how mapping as boundary objects could contribute to alternative forms of worlding that also may lie beyond the scientific production of truth (see in detail *Mapping Moria*).

Next to the different types of maps developed and detailed out in the paper *Mapping Moria,* I also crafted *preliminary and messy maps* during my observations in order to catch as many impressions as possible from a particular site. Those maps sketched out the architecture of a place and assembled the people, devices, technologies and other materials which were part of a practice. Furthermore, I outlined courses of action in a sketchy way and noted utterances that labeled, problematized or explained the practice in question. I did this by creating rough figures, signs and keywords, which basically worked as mnemonic devices. Sometimes, I was also allowed to take pictures.

Right after a visit of a particular site or a meeting with an interlocutor, I took those messy maps as the basis for several working processes: I sketched out a chronological report about the events during the visit, I created detailed descriptions of particular courses of action, and I enriched the accounts that my interlocutors were mobilising through narrations, wordings and problematizations. I created new and more structured maps based on the gathered material and I wrote memos about preliminary generalizations, theorizings, and further steps for the research process.

When I met an interlocutor not in her office but somewhere else for an interview, I also used *mapping as an interaction device*. Using a big sheet of paper on a table and between the interlocutor and myself, I started creating a map while the interlocutors were speaking. I sketched out the human and non-human actors the interlocutors inter-act with, the workflows they are embedded, the tasks, challenges and rules they follow, as well as their doings to make things work. We also sketched out alternatives, variations and unforeseen events in their daily courses of action (see in detail *Mapping Moria*).

In many of those instances, the map became an active part in the course of the interview. To a certain extend, the maps disciplined the interlocutors and myself to stick to the mundane daily work. We could point to actors, devices or practices, and sometimes it happened that the interlocutors got themselves involved in the crafting of the map. Furthermore, the maps displayed all the different topics the interlocutors had mentioned

before and thus made visible the complexities of her every-day work. With the map, we could also come back to issues being already mentioned but not yet made to the subject of the interview. Occasionally, I also mobilized those maps in other interviews, either to add to or to confront accounts of an interlocutor. The map also made visible empty spaces and blind spots, and hinted to the boundaries of a field of practice or a field of expertise. In this sense, the map became a kind of navigation device not only for the broader research process but also for the interview itself and marked the terrain of a practice.

In the ongoing process of analysis, I used those different *mapping approaches for reflecting upon and (re)directing my research activities*. Have I assembled enough materials, technologies and devices and reconstructed the logic of a certain practice extensively? Have I collected enough accounts on potential tensions and struggles field actors might be entangled in? Have I collected enough stories, narrations and concerns that hint to issues and critiques? The mapping approach also urged me to study carefully the chain of translation data and other entities go through from one site to another and made visible blind spots.

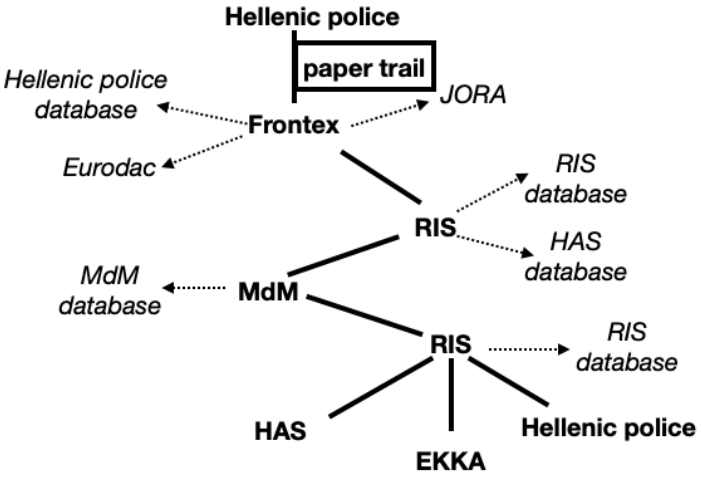
3. Key insights and contributions

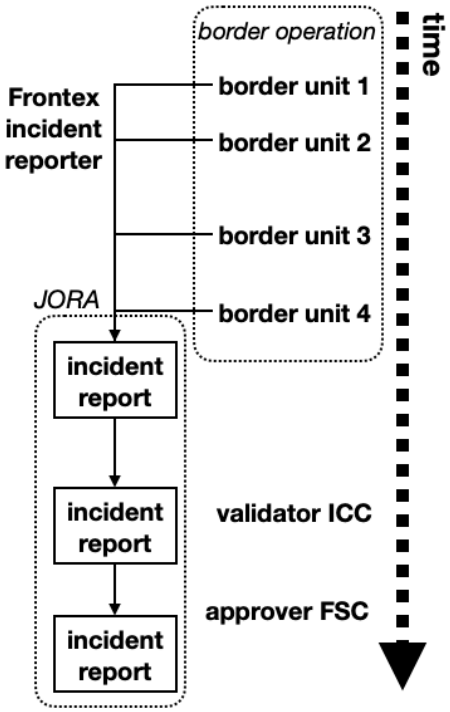
The last sections have sketched out the scope of the dissertation, reflected upon the methodological stance, and introduced the methods I developed and used for navigating through a complex research process. In the following sections, the key findings of the papers will be summarized and their contributions to the recent debate on information infrastructures of European migration and border control will be outlined.

3.1 Modes of infrastructuring

The first insight of the dissertation is the decomposition of a migration and border control information infrastructure through a praxeographic research design outlined above and based on an extensive empirical inquiry. The common starting point of the different case studies on the information infrastructure of the Frontex Joint Operation Poseidon is the basic question of how data circulation across organizations and across information systems is accomplished. The papers make clear that information infrastructures cannot be assumed as coherent and stable and that data circulation neither can be taken for granted nor is merely a technological matter. On the one hand, the papers analyze in detail how the interplay of information systems, databases, standards, classification systems, policies, organizational hierarchies, and routines and styles of reporting produce frictions, gaps and barriers that have impact on the translocal and interorganizational circulation of data. On the other hand, the papers carve out modes of infrastructuring that work through those barriers, gaps and frictions. This includes explicitly work-arounds, tinkering, informal and improvisational circumventions and low-tech solutions. The dissertation has conducted several case studies that detail out various components of the information infrastructure of the Frontex Joint Operation Poseidon. Furthermore, the dissertation discusses several modes of infrastucturing that organize the interconnection of installed bases, actors and devices in different ways.

In the registration and identification center Moria, there is a mode of infrastructuring at work that manages to exchange data between different organizations, for instance between the Hellenic Police, the Hellenic Registration and Identification Service, Frontex, Doctors of the World, the Hellenic Asylum Service and EKKA (*Infrastructuring Moria*, *Mapping Moria*). This is achieved by a *spatial form of coordination* that assembles a number of actors and practices at one site (the center) but in different places (containers). Each container hosts a workplace for one of the organizations, highly routinized practices, and a particular area of expertise. In contrast to those immobile elements, so-called "flow managers", the arrivals and all kinds of documents move from one container to another. The interplay of immobile and mobile entities brings a chain-like procedure of identification and registration into being. This process is coordinated via *paper based forms* that collect and transport data from one container to another, coordinate the distributed activities and record the status of a certain case. Technological and organizational frictions and gaps are circumvented through *informal work-arounds*: For instance, data entries about a person in various databases are harmonized by adding identification numbers on identification forms. Or restrictions of access in a database are circumvented by sharing logins and passwords informally. The interorganizational process of creating, sharing and storing data by various organizations thus is shaped by a spatial arrangement of workplaces and the circulation of forms from hand to hand.



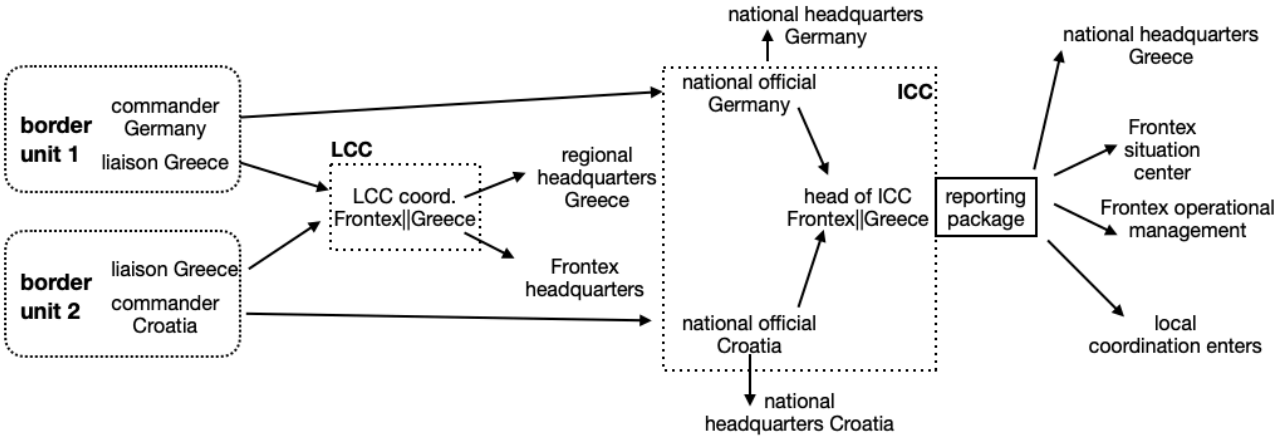


In the case of the creation, circulation and exchange of reports in the process of Frontex incident reporting (*Turbulence JORA*), many different border guard units at distant sites deliver data to a coordinator (the incident reporter) who feeds data into one information system (JORA) that stores the data for the Frontex situation center at the Frontex headquarters. Here, data circulation is framed by the *inscriptions of the JORA information system*. JORA is a rigid information system that strictly defines user roles and access rights, mandatory entry fields, and reporting schedules. It requires data gathered by many border guards but only allows a Frontex incident reporter to enter data. Hence, the *incident reporter* is put into the position of mediating between the rigid information system and the distributed reporting practices of various border guard units. As it turns out, the incident reporter faces *multiple temporalities she has to coordinate*: The data from field sites

supposed to be delivered as quickly as possible - preferably “real-time”- to the Frontex headquarters in order to create “situational pictures”. However, before the data can be used it has to be validated. Moreover, the border guard teams are part of a border operation and have to synchronize the reporting practices with the course of this very border operation. Temporal coordination allows the collection and circulation of data in the end, yet it produces a crooked and time-consuming pace of bit-by-bit processing.

The third case is about the circulation of data via reports that are distributed beyond organizational boundaries (*Switching points*). Here, organizations produce reports that are exchanged with many other organizations. The usual chain of reporting - and this is also specified in the Operational Plan of Frontex Joint Operation Poseidon, the legally binding agreement between Frontex and the authorities - runs along organizational boundaries of single police authorities. For instance, a German border guard deployed in a Frontex operation sends her report to her supervisor, the so-called national official who then merges several of those reports and sends it to the headquarters of the German Bundespolizei in Potsdam. Infrastructuring reports beyond organizational boundaries is achieved by *coordinators who operate as switching points*. LCC coordinators for instance are equipped with an organizational role of Frontex and of the Hellenic coast guard and thus are plugged into two different reporting regimes. By this, they can transfer data from one reporting channel to another. *Joint coordination centers* again assemble officials from different EU and member state agencies who deliver their reports to the chairman - the ICC coordinator - who again crafts a reporting package and distributes it to a number of actors being involved in the operation. The reports again can be used by different actors and across domains because of their increasing *standardization and itemization*.

Among other things, the four papers hint to an infrastructural design that can be characterized as provisional, temporary, and low-tech in the sense that many of the gateway, coordination and mediation processes are conducted mostly by humans and manual work. The papers also sketch out several modes of infrastructuring that assemble and coordinate various actors and practices in different ways: While spatial arrangements process data along a chain of migration and border control actors at one place, temporal arrangements process data from various actors from distant places along a timeline, and interface arrangements interconnect data channels across organizational boundaries. All of those arrangements are highly flexible and adaptable. Parts of the spatial arrangements can be (and have been) reconfigured, timelines and paces can be (and have been) modified. The provisional nature of such arrangements comes along with frictions



and turbulences and requires mediation and coordination practice that turn the circulation of data into crooked processes flanked by work-arounds and tinkering.

3.2 Frictions and their productivity on practices and processes of infrastructuring

Recent work has problematized the implicit assumption of seamless flows and data spaces by conducting in-depth analysis on the infrastructural dimensions of predictive policing (Egbert & Leese, 2020), of the algorithmic regulation of security (Bellanova & de Goede, 2020), of datafied (re)identification regimes (Glouftsios & Scheel, 2021), or of large scale information system maintenance (Glouftsios, 2020; Bellanova & Glouftsios, 2020). This dissertation contributes to such work by decomposing smooth data flow into turbulent processes of infrastructuring full of inconsistencies, gaps, and frictions.

One turbulence is that 'consistent data across both space and time [requires] a lengthy chain of operations, including observation, recording, collection, transmission, quality control, reconciliation, storage, cataloguing, and access' (Edwards, 2010, p. 84). In this chain of operations, data is translated and altered. As Pelizza points out, 'any of these translations – be it from one actor to another, or between two different materialities – constitutes an opportunity for data loss or corruption, that is, it offers an interface for data friction' (Pelizza, 2016a, p. 43). The paper on the Frontex information system JORA works out how Frontex 'chose to create one centralized information system (JORA), limited its users, and strictly defined the data to be gathered through templates and item batteries' (*Turbulence JORA, p*. 679) in order to tame the complexity of data collection and circulation with many authorities and differing reporting routines, languages, and data systems involved. However, this extensive prescription of users only made a few incident reporters eligible for data entry who then were dependent on many additional reporters in order to collect all the required data. This dislocated data friction along the new chain of data collection.

Another turbulence is related to the many different working contexts, in which data is collected, processed, merged and used for various outputs. When many different actors produce data on a particular border operation, on a particular migratory event, or on a particular migrant cohort at the same time, then how to keep various datasets equivalent? And when many data versions circulate, which one then can be accounted as valid and can be used for further usage - such as for situational pictures or risk analysis? The paper *Turbulence JORA* works out in detail how the proliferation of data versions is tamed by practices of cross-checking and comparing different reports and by a validation procedure organized by Frontex. Taking the pragmatics of version control and the procedures of validation together, we can observe a reverse-engineering of legitimate data: Instead of a source of authentic data which can be reused by many, legitimate data is the result of a process that (loosely) harmonizes many data versions and that makes one particular version - that of Frontex - especially valid and legitimate in the end. Yet, also the process of validation dislocates frictions. In the case of JORA, the design of a reversible validation chain made the

pace of data processing variable and unreliable and thwarted an accelerated reporting process and the agenda of "real-time" situational picture creation (*Turbulence* JORA).

A third turbulence that caused data frictions is that information systems build up their own idiosyncrasies and entrenchments. The papers on the registration and identification center Moria work out how the Hellenic police database has been designed for Hellenic police officers only. Access rights are only given to Hellenic officers and the user language is in Greek only. Frontex officers who were supposed to work with the this Hellenic information system hence faced various problems and became lousy mediators producing all sorts of data errors (*Infrastructuring Moria*; *Mapping Moria*).

Putting turbulences and data frictions into the center of the inquiry, the dissertation details out how inconsistencies (Harvey et al., 2016), fragility (Denis & Pontille, 2015) and frictions (Edwards, 2010) are not only exceptional failures or break-downs of information infrastructures but inherent to the very processes of infrastructuring. They are even constitutive or productive in a Foucauldian sense to such processes, as they are an ongoing source for further 'adapting, tailoring, appropriating, tuning, modifying, tweaking, making, fixing, monitoring, maintaining, repairing, hacking, vandalizing and instrumenting' (Karasti & Blomberg, 2018, p. 239). In this sense, the conceptual and empirical scope of analysis developed in this dissertation does not stop with pointing at failures but asks how overflows, frictions, dysfunctions and decay become productive and generate and shape the enfolding of infrastructures.

3.3 Information infrastructures and the formation of multiple data spaces

Datafied forms of migration and border control have become the topic of a vibrant debate at the intersection of critical migration and border, critical security and surveillance, and science and technology studies (see section 1.2). Yet, surprisingly the circulation of data has often been described in container terms. Many studies examine the policy, the organizational or the technological set-up of large-scale systems (for instance of Eurodac, SIS II and VIS) and implicit assume that those systems determine data space of circulation. Others simply take national, international or even global data flows for granted and as a starting point of a critical inquiry, assuming that data would travel without corruption in homogeneous data spaces.

Taking frictions, gaps and incoherences as a starting point and focusing on the practices and processes of mediation and coordination allows another and more complex conceptualization of data spaces that also includes a topological dimension. The paper *Switching points* draws on the notion of the "network space" in order to develop a better understanding of the geographies of data circulation. In their paper *Situating technoscience: an inquiry into spatialities* John Law and Annemarie Mol argue that entities can only travel throughout Euclidean space, when they are embedded in a stabile topological space. Entities become mobile, when they are kept immutable in a network space (Law & Mol, 2001). For Law, many "global flows" of information, capital or goods care entangled with network spaces, in which relations between locations and

organizations are kept stable and the traveling entities are shaped and stabilized by standards, measuring devices, centers of calculations and other things (Law, 2002).

The dissertation picks up the notion of network spaces and reflects upon the spatialities of data circulation in two different ways. First, it shows how data spaces are entangled not only with geographies of border control but also with institutional ecologies and administrational infrastructures. The papers *Infrastructuring Moria* and *Mapping Moria* outline how the logistical set-up of the registration and identification center Moria produces not one homogeneous data space but several data spaces that are related to particular authorities, procedures, and sorting mechanisms and that enact specific data subjects and forms of control. For instance, 'data entered into the Hellenic Police database are subjected to relocation and law enforcement and are used to re-identify a registered migrant within the territory of the Hellenic state with the purpose of confronting her with whereabouts fixed during registration. Data entered into Eurodac enact a migrant subject by denial within the EU territory and determine to which EU member state authority and territory the migrant subject is related to. Data entered into the RIS database again are used to finalize an official and legal ID-entity of an individual which provides and limits rights and social services and binds them to a particular region. In this sense, the hotspot organizes several data registrations and enacts 'multiple spacings on the local, national, and European level' (*Infrastructuring Moria, p.* 619).

Second, the papers complexify the notion of a network space by carving out a multi-layered topology of data circulation. The paper *Switching points* starts with an analysis of standardization processes that define prefabricated response opportunities and outlines how a "cascade of translations" brings immutable mobiles into being and enacts an *encompassing network space across authorities*. Yet, this network space is *heterogeneous* and comprises multiple social worlds that are loosely coupled through the reports. In this regard, increasingly list-like reports work as boundary objects that 'make it possible to translate contexts into a structure of isolated entries and thus enable a loose cooperation between authorities and departments without consensus' (*Switching points, p.* 69). Additionally, the paper continues, the network space can be understood as *fragmented* consisting of various and unconnected actor-networks being organized along organizational boundaries: reports are created and forwarded along hierarchical schemes (re)enacting procedures and signatures (re)attribute accountabilities to particular persons and (re)produce particular positions within an organization. Yet, those fragmented network spaces are transcended by different types of switching points ("Schaltstellen"). The switching point "bifurcation" for instance collects several field reports and transfers data from them to another report from Frontex. The switching point "dissemination" again creates a reporting package that spreads various reports to other parties beyond organizational boundaries for purposes of evaluation and validation. By this, a *star-shaped network space* is layered upon the fragmented network spaces.

What we learn from this analysis is that the information infrastructure of Frontex Joint Operation Poseidon enacts something like a European data space that interconnects EU and national agencies, yet, without falling back into reductionist notions of its shaping. Neither is it a supra-national data space of data circulation with Frontex taking the lead, nor is it a fragmented data space of national authorities. Instead, a

number of interconnected data spaces *scales up* to a data space, which can be characterized as heterogeneous, fragmented and multi layered, and which brings multiple enactments of data into being. It is related to a trans/national technobureaucratic governance that distributes data both to national *and* EU administrations and stabilizes boundaries of both national *and* EU organizations at the same time.

3.4 Data circulation and the shaping of European migration and border control regimes

With the praxeographic inquiries on data circulation in the realm of the Frontex Joint Operation Poseidon we get a clearer picture of how information infrastructures shape and affect forms of (border) control. Those insights may contribute to recent debates on the contemporary European migration and border regime and its rationalities of control. Work in the realm of critical migration and border studies has pointed out that different forms of control intersect at the European migration and border regime. We can observe both a hardened exterior frontier with watchtowers, fences, and detection devices (Walters, 2002, p. 573) and a spread of a networked form of surveillance into the hinterland which can be described in terms of Deleuze's (1992) notion of control. The papers on the registration and identification center Moria brings these different strands together. It shows how the hotspots can be understood as a merging point being a *space of containment* that keeps migrants in a local set-up of fences, gates, containers, and islands and being a crucial component of *EU-wide data driven control assemblages* that 'abstract individuals from their territorial settings' (Haggerty & Ericson, 2000, p. 611) and store data doubles into a network of national and international databases for the purpose of surveying and re-identifying "irregular" migrants on the move. By analyzing the data practices and following the trajectories of forms, people and data, the papers line out in detail how the Greek hotspots realize multiple data transfers to different governing regimes and enact multiple spacings.

The paper *Turbulence JORA* again conducts a critical analysis on recent attempts by Frontex to create real-time governance and surveillance of the EU's external borders. Some years ago Frontex set up the Frontex Situation Center (FSC) and developed and implemented the information systems Eurosur and JORA with the aim to produce "situational pictures" and "situational awareness" by processing and merging all sorts of data "real-time". Recent work, particularly on Eurosur (Jeandesbolz, 2011; Bellanova and Duez, 2016), has called out new forms of "live governance" with synthetic situations and scopic systems (Walters, 2017) and elaborated on an emerging "politics of visibility" (Tazzioli, 2016).

The paper *Turbulence JORA* questions such logics of control which are based on the assumption of seamless data flows across sites and organizations. In order to understood the logics of datafied forms of border control, one needs to study in empirical detail the complexities and contingencies of data collection and data processing. The paper then shows empirically how the infrastructuring of data circulation enfolds its own temporalities and paces, which are crooked and full of frictions. One of the paper's finding is that situational pictures are not created "real-time" - even though a work-around distributes "preliminary" reports on so-

called border crossing incidents to selected actors from the operation management of the joint operation. Rather, the infrastructuring of JORA has other effects on border control. JORA for instance has managed to standardize data and hence to aggregate, merge and compare data since 2011. This made the Frontex risk analysis unit to a powerful entity that nowadays produces a big variety of risk analysis of EU's external borders and beyond. In this sense, JORA has become a powerful tool for comparing present and past events, assessing impact levels for border regions, and predicting possible futures that builds the basis for the development and adjustment of strategies, operational plans and schedules within the joint operation Poseidon (*Turbulence JORA, p.* 691).

3.5 Infrastructuring data circulation and the (re)ordering of migration and border control

A great extend of recent work on information infrastructures of migration and border control has studied how new border technologies and the collection, distribution and assessment of data has affected the mobility and the lives of migrants. Biometrics and reidentification technologies, green-, grey-, blacklisting and social sorting, or the separation and channeling of various migrant populations in border arrangements from hotspots to smart border initiatives have been objects of extensive research. This dissertation acknowledges the importance of such research but seeks to widen its scope to the struggles and reorderings such information infrastructures enfold. Involved state agents may have differing takes and agendas on the treatment of migrants, the collection of data, bureaucratic accuracy, modes of collaboration or the distribution of resources and responsibilities. They may also rely on differing regulations, standard operation procedures, and routines and styles of office work. The praxeographic research focus allows studying information infrastructures as sites of contestations where interests, issues, and tactics of various human and non-human actors clash, where controversies are unfolding and where frictions and contradictions are glossed over, circumvented and carefully maintained.

Andersson (2016) has shown how the information infrastructures reassembles actor-networks, actors and their positions in the field of migration and border control. In his case study, the Spanish Civil Guard can expand its power and influence by initiating an information exchange project altogether with border guard agencies from North African countries (see also Bellanova & de Goede, 2020). Furthermore, Pelizza has called for a situated and in-depth analysis of 'technical details [as] strategic sites in which to follow the redistribution of authority and accountability, and also to uncover longer-term micro-evidences of state transformation' (Pelizza, 2016b, p. 313). In her work on civil registers in Italy, Pelizza shows how a new data and certification architecture reconfigures the relations between municipalities and the ministry of interior (Pelizza, 2016b).

Following such work, the dissertation works out several constellations, in which the infrastructuring of data circulation (re)configures the institutional orderings of migration and border control and vice versa. *First*, the papers on the registration and identification center Moria outline several tensions and struggles between EU,

state and non-state actors and work out how they shape the data practices at site (*Infrastructuring Moria; Mapping Moria*). As it turned out, each container in the Moria camp - from the Frontex identification and fingerprinting container to the Doctors of the World medical screening container - assembled a particular social world with representatives of one organization, specific forms of expertise, routines and understandings of what the work at the Moria center is about. Such different social worlds clashed in several ways (*Mapping Moria*). For instance, when Hellenic police identified and fingerprinted migrants at Moria, only a small amount of the registrations has been uploaded to Eurodac. Frontex and the EU Commission suspected Greece to circumvent the Schengen agreement.[2] One reason for Frontex' intervention in the Moria center was to take over this procedure, to ensure a systematic data upload to the Eurodac database and hence to force Greece to take over its responsibilities towards asylum applications articulated within its very territory. This understanding of migration management by the EU Commission and Frontex was at least partially aligned with *national* notions of migration management from other EU member states that wanted to see Greece as the responsible state for migrants entering the EU.

When the camp was overcrowded, the Hellenic police decided to speed up the identification and registration procedure. The Frontex officers refused to follow this order (*Turbulence JORA, p.* 163). In this case, the struggles about how to identify and register migrants was linked to competing versions of migration and border control and were part of struggles between Hellenic authorities and the EU Commission (Kuster & Tsianos, 2013). It became a power play between Frontex and Hellenic Police actors who mobilized different entities to support the claim: While the Hellenic police team leader referred to the formal and legal chain of command which put her into the position of a supervisor, Frontex border guards referred to their work assignments, to all the resources Frontex brought in including fingerprinting machines, computers, containers and all kind of work material, and reached out to the Frontex coordinators, namely the Support Officer and the Frontex Operational Coordinator.

Second, the dissertation shows how tensions and institutional reorderings come into being through the *overlapping of various orderings of mobility*. Data practices cannot be analyzed in an isolated way but need to be situated in the everyday work of border control. They are entangled with further bundles of relevancies, practices and orderings:

In the case of the Moria hotspot, at least three different orderings of mobility intersected with the data practice of screening and fingerprinting at the registration and identification center in Moria: moving migrants through the center and taking overcrowding, hygiene, weather conditions and other issues into account, collecting data from migrants and uploading data to various information systems for the purpose of migration control, and a speedy creation of reports for creating situational pictures as quickly as possible at the Frontex headquarters (*Turbulence JORA, p.* 690).

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[2] Due to the Schengen agreement, those states registering migrants for the first time in the EU via Eurodac are responsible for them.

In the case of JORA, data collection for the incident report needed to be delegated to several Frontex border guard units. When the latter carry out a border operation in order to police the mobility of migrants, they have to 'assess the relevancies of a situation, [...] negotiate between border and reporting practices' (*Turbulence JORA, p.* 685) and decide where, when and how thorough to write a report. Providing basic help, securing a border site, and following orders in the course of a border operation usually has a higher priority than collecting data - and it is up to the border guard units at site how the pace of reporting enfolds. By this, the border guard units (re)order both the course of a border operation and the process of data creation.

Third, the dissertation makes clear that infrastructural work can be understood as a powerful practice that redistributes the relations among collective actors, authority and accountability. As outlined above, the information infrastructure of Frontex Joint Operation Poseidon does not create a single and coherent EU data space but rather a patchwork of data spaces that are punctually interconnected. In this context, Frontex has become one of the driving forces that coordinates, maintains and pushes forward the redistribution of data among national police and coast guard authorities of (and beyond) EU member states:

By developing and providing standardized and to a great extent computer readable reporting templates, Frontex creates inter-organizational data ontologies step-by-step. The implementation of rigid information systems disciplines users, controls the collection and processing of data, and thus contributes to a EU wide harmonization of data practices. Through the organization of a validation chain datasets of various reports on a so-called "migratory incident"are cross-checked and harmonized (*Turbulence JORA*). And the creation of switching points ("Schaltstellen") has made it possible to distribute data beyond single EU or EU member state authorities (*Switching points*). In this sense, Frontex not only multiplies and distributes but also "normalizes" (Ureta, 2014) datasets, data practices, and devices in use across organizations through standardization, validation and maintenance work. And last but not least, Frontex has expanded its capacities of gathering and assessing different types and sorts of data. With the Frontex Situation Center and the Risk Analysis Unit, Frontex has established two centers of calculation that collect, standardize, merge and process data, monitor data practices, maintain information systems, and fabricate knowledge on EU's external borders (*Switching points*).

The dissertation indicates that it is exactly this infrastructural work that puts Frontex into the center of European data spaces of migration and border control. Frontex has become what Callon calls an "obligatory passage point" both for the interorganizational and transnational exchange of data and for the production of knowledge for purposes of governing the EU's external borders (Callon, 1984). With this, Frontex entered the arena of European security actors with a role of a coordinator and strengthened its position by providing infrastructural components and services (Huke et al., 2014).

4. Outlook - making Europe through infrastructures

Work from history of technology has studied forms of European integration through infrastructural initiatives and reconstructed stories of different European initiatives such as of electricity, railroads or communication in the 19 and 20th century (Lagendijk & van der Vleuten, 2013; Schot et al., 2011). Yet, only very recently, work at the intersection of STS and critical migration and border studies has started to show interest in the coproduction of Europe and migration and border control information infrastructures. One exception is Pelizza (2020) who combines research on the infrastructural making of Europe with work on the knowledge production of state bureaucracies (Mukerji, 2011; Carroll, 2006) and asks how the production and circulation of data enacts administrational orders beyond the nation state (Pelizza, 2020, p. 266). Drawing on a case study of the Hotspots in Italy Pelizza (2020) works out two different styles of categorising and sorting migrants. While NGOs organized social sorting via coloured wristbands, whose codings were kept confidential and thus ensured privacy to the migrants, Hotspot authorities sorted migrants spatially and thus made health issues collectively visible. By this, Pelizza contends, two different forms of governance incorporating differing sets of values (privacy vs. public health) emerge with each of them assembling another network of institutional actors, devices and classification systems (Pelizza 2020).

While Pelizza details out the normativities and value systems inscribed into the bureaucratic production of knowledge, she can only speculate about the emerging administrational orders beyond the nation state. This dissertation fills this gap by tracing European spaces of circulation, collaboration and exchange (Barry, 2001). It hints at specific modes of infrastructuring, how and in which form a European data space takes shape, and how practices and processes of data circulation reorder practices of border control.

Moreover, based on the multiple inquiries into the Frontex Joint Operation Poseidon, this dissertation has carved out a particular type of information infrastructure that has been neglected so far in the recent debate on information infrastructures of European migration and border control. In contrast to systems like Eurosur, the VIS or the SIS II, the information infrastructure of the Frontex joint operations is temporal and provisional by design, it is only partially standardized, has not developed shared classification systems or semantic standards, and is in a constant process of transformation. Instead of an integrated data ecology, the information infrastructure of Frontex Joint Operation Poseidon assembles and punctually interconnects various separated installed bases. Interoperability is accomplished by people and formative objects that coordinate various data practices and that translate and multiply data across channels. This “low-tech” solution deals with inconsistencies and organizational idiosyncrasies of data processing, circumvents rigid information systems, and coordinates actors from various organizations in provisional ways. But those complex forms of mediation also cause data frictions, overflows and “irregular bureaucracy”. Furthermore, data is shaped by a number of classification systems that are only partially standardized through reporting templates. Informal communication channels and “other” containers turn out to be crucial for a trans-organizational data circulation (*Turbulence JORA*). One of the consequences is that all kind of data repair practices evolve that seek to tame, circumvent, tinker data frictions.

With that, the dissertation has outlined a particular type of an infrastructural design that somewhat reflects the provisional nature of Joint Operations. Such operations are set up in short time, carried out only temporarily and based on a constantly changing composition of actors and organizations. They produce, assess and distribute data between a vast number of police and coast guard authorities from EU member states, EU agencies and other actors and they are capable of working through many EU and nation state agencies' chains of command and communication (Follis, 2017). The dissertation makes clear that such interventions do not produce a "zero-sum game", that is the empowerment of 'some government bodies at the expenses of others [which] would not be only reductionist, but also inaccurate' (Pelizza, 2016b, p. 312). Migration and border control is not taken over by Frontex, and the fabrication of knowledge does not simply shift from a national to a supranational, European level (Painter et al., 2017). Rather, Frontex has become an additional actor in an information infrastructure that interconnects a variety of administrational data-spaces, harmonizes data beyond organizational boundaries, and distributes data and knowledge among EU and EU member state authorities. In this mode of infrastructuring Europe, both national authorities and EU agencies gain additional data that shape both national and transnational technobureaucratic forms of governance.

Letting Frontex quickly intervene into EU member states and collaborate with "host member state" organizations without infringing their autonomy and competences also requires the adaptation of the bureaucracies of state authorities (Follis, 2017). We might say that this type of infrastructural design is organized around interfaces and "plug-ins" (Latour, 2005). The papers have introduced liaison officers who are plugged into mixed Frontex border guard teams that work under a Hellenic police or Hellenic coast guard team leader, coordinators who bridge and multiply information channels, and local and international coordination centers that host representatives from all the authorities involved and put them under the jurisdiction of the host member state. This very interplay of Frontex "support-service-plug-ins" on the one side and national authorities making those plug-ins compatible to their border guard units, command and reporting channels, and coordination centers on the other side pushes an institutional transformation forward that brings a genuine form of European migration and border control into being.

It is no coincidence that investigations in recent years have repeatedly revealed the cover-up of push-backs in the Aegean Sea (Christides et al., 2020), the restraint of information on questionable conduct in the joint border operations (Howden et al., 2020), or the denial of misconduct of border guards by Frontex and the Hellenic authorities alike. Drawing on the research conducted in this dissertation, one might suggest that this is closely related to the very infrastructural design of this European information infrastructure. Its highly provisional and to a great extent informal nature is deeply entangled with ignorance and lacking reflexivity and almost systematically convolutes accountabilities (*Mapping Moria*). Critical research at the intersection of STS and critical migration and border studies thus needs to investigate not only legal violations of border control and security actors but also the underlying infrastructures, their design and effects. How to hold infrastructures accountable is beyond this dissertation. Yet, its empirical inquiries into the socio-material and socio-technical shaping of European migration and border control information infrastructures may be a good starting point for further research on the accountabilities of infrastructures.

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Paper 1

Pollozek, S., & Passoth, J. H. (2019). Infrastructuring European migration and border control: The logistics of registration and identification at Moria hotspot. *Environment and Planning D: Society and Space*, *37*(4), 606–624. https://doi.org/10.1177/0263775819835819

Summary and Contribution

This paper examines the registration and identification centre Moria on the island Lesvos in Greece as a logistical site which fulfills two different functions within the European migration and border regime. It locates, contains, and sorts individuals locally at the external borders of the EU and creates, inserts, and processes data for controlling people on the move. The paper scrutinizes how both the movement of migrants and data is organized at the site. By developing an analytic lens of logistics, it outlines a specific mode of infrastructuring which aligns staff from different organizations with databases, devices, and migrants all in one place and organizes mundane practices such as filling out forms, taking fingerprints, signing, and entering datasets along a chain. That way the hotspot is able to locate, sort, and detain those who arrive at the hardened EU border and to create a data infrastructure for controlling, monitoring, and governing further movement by processing data through the bureaucratic channels of the EU's transnational control assemblages.

The paper is based on extensive fieldwork Silvan Pollozek has conducted. This includes approaching various EU agencies, EU member state authorities, and non-state and non-governmental organization, organizing field access and interview partners, planning and doing several field trips to Lesvos, Athens, Piraeus and Warsaw, writing a field diary, drawing many maps of both the spatial arrangement of the RIC Moria and the circulation of forms, data and actors, and collecting all kind of field materials from forms, classification sets, standard operation procedures, handbooks, how-to manuals, operational plans, and policy documents.

Furthermore, Silvan transcribed, coded and interpreted all the interviews, related the results to all the other collected and heterogeneous materials, and developed a thick description of the registration and identification procedure with all its steps, actors, practices, devices and technologies involved. He collected and worked through several corpus of literature from science and technology studies, critical migration and border studies, and critical security studies to critical surveillance studies. He developed a praxeographic approach on infrastructures as well as a 'logistical lens' that helped carving out different *modes* of infrastructuring.

Finally, Silvan interrelated different strands of literature and developed a broader argument that also positioned the paper in a broader debate on logics of control within the European migration and border control regime.

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Infrastructuring European migration and border control: The logistics of registration and identification at Moria hotspot

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Abstract
This paper examines Moria hotspot in Greece as a logistical site which fulfills two different functions within the European migration and border regime. It locates, contains, and sorts individuals locally at the external borders of the EU and creates, inserts, and processes data for controlling people on the move. Based on ethnographic fieldwork in Greece, including interviews with local administrators from the Registration and Identification Service, Médecins du Monde, Frontex and Hellenic Police and a collection of internal and publicly available planning, policy, and management documents and handbooks, the paper scrutinizes how both the movement of migrants and data is organized at the site. By developing an analytic lens of logistics, it outlines a specific mode of infrastructuring which aligns staff from different organizations with databases, devices, and migrants all in one place and organizes mundane practices such as filling out forms, taking fingerprints, signing, and entering datasets along a chain. That way the hotspot is able to locate, sort, and detain those who arrive at the hardened EU border and to create a data infrastructure for controlling, monitoring, and governing further movement by processing data through the bureaucratic channels of the EU's transnational control assemblages.

Keywords
Actor-Network Theory, border, control, data, infrastructure, logistics, migration

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Introduction

In May 2015, the EU Commission (2015) presented the European Agenda of Migration and announced the development of a new hotspot approach as part of an immediate action package to assist "frontline" member states in "managing exceptional migratory flow". The hotspot approach stated that EU agencies – namely Frontex, European Asylum Support Service (EASO), the European Police Office (Europol), and the European Union's Judicial Cooperation Unit (Eurojust) – should work with Italian and Greek authorities on the ground to help them process identification procedures, asylum applications and return operations. In the following months, 11 hotspots were set up, and the Moria hotspot on Lesvos was put into operation in October 2015 (Deutsche Welle, 2015). As registration, assessment, and redistribution points near the EU external border, the hotspots channel migration flows, letting pass those who are in need of international protection and sending back those who are not (EU Commission, 2016).

With the implementation of the EU-Turkey Deal (European Council, The Council of the European Union, 2016), a special arrangement came into force, stating that all migrants who arrived on islands in the Aegean Sea after 20 March 2016 will be deported back to Turkey, unless "they can prove that Turkey is not a safe third country for them" (Hess and Heck, 2016: 3) or they are categorized as vulnerable by the Hellenic Asylum Service (HAS).

The Schengen System initiated an extensive transformation process of border control and a "re-bordering" of nation states within the EU. In contrast to voices which, especially in the 1990s, proclaimed a deborderization of Europe – where goods, people, and capital could circulate smoothly and freely – Walters (2006) states that the implementation of Schengen was counterbalanced with a series of "flanking measures". On the one hand, there is a hardened exterior frontier with watchtowers, fences, and detection devices (Walters, 2002: 573). On the other hand, Walters observes a "spread of surveillance into the hinterland" (Foucher, 1998: 238), which he describes in terms of Deleuze's (1995) notion of control. Migration and border control has a networked form with many centers, which is no longer territorially fixed. Its aim is not to territorialize, to govern individuals and to shape identities by institutions such as the school or the prison but to produce filters and gateways for people on the move separating the bad from the good and producing channels of (im) mobility by re-identification arrangements (Adey, 2012: 196). As Walters (2006) points out, this is related with databanks, identifiers – such as fingerprints which work as passwords – scanners, and security professionals (197).

In this paper, we argue that the hotspot can be understood as a merging point of both sides of the European migration regime, being part of the hardened exterior frontier of the EU and of transnational control assemblages – in one place. Drawing on ethnographic fieldwork including interviews with local administrators from the Registration and Identification Service (RIS), Médecins du Monde (MdM), Frontex, and Hellenic Police and internal and publicly available policy and management documents and handbooks, we will ask how processes and practices at the hotspot make people governable and containable at the site as well as how the hotspot is organized so that (re)identification and control is distributed to actors at numerous other sites by multiplying data identities within information infrastructures. The hotspot, we argue, is a logistical device which locates, sorts, and detains those who arrive at the hardened EU border and creates a data infrastructure for controlling, monitoring, and governing further movement by processing data through the bureaucratic channels of the EU's transnational control assemblages.

Our account draws on two important, but seemingly contradictory, interpretations of what the hotspot (ontologically) is in recent literature in critical migration studies,

science & technology studies (STS) and surveillance studies approaches. On the one hand, it is a space of containment aimed at regaining "control over migrants' autonomous geographies" (Tazzioli and Garelli, 2018: 2) by keeping migrants in a local set-up of fences, gates, containers, and in many cases, such as the Greek hotspots or the hotspot on Lampedusa, on islands which are mostly (but not only) located at the margins of Europe. However, as Pallister-Wilkins (2016) argues, barriers at the exterior frontier of the EU are not so much about building up a "Fortress of Europe" to prevent people from crossing the border at all, but about channeling mobilities in an organized way. Tazzioli and Garelli (2018: 2) have a similar stance and understand the hotspot as a site where both forms of containment and channels of mobility are generated. Drawing on field work on Lesvos, Tazzioli and Garelli understand hotspots as chokepoints in sorting migrants into different institutional tracks and organizing channels of "forced convoluted mobility" (Tazzioli and Garelli, 2018: 9). While some are relocated within the EU by the European Asylum Support Office (EASO) and the Office of the United Nations High Commissioner for Refugees (UNHCR), some are eligible for asylum in Greece and may move to the mainland and others are detained and repatriated (Antonakaki et al., 2016).

Alison Mountz (2011) conceptualizes such island set-ups as components of a broader pattern of remote detention that "hide asylum-seekers from view of media, human rights monitors, and publics at large" (118). Although this is not true for all hotspots in the EU, such an approach allows us to see how temporal incarceration is one crucial component of channeling mobilities and how hotspots are part of a broader strategy of a European border regime which seeks to contain sites and issues of organizing mobilities at "enforcement archipelagos" (Mountz, 2011: 118) at the external border of the EU.

On the other hand, the hotspots can be understood as crucial components of EU-wide *data driven control assemblages*. Lyon (2003) points out that such assemblages are tightly entangled with technological systems and datafication. "Data doubles" of individuals are created which are "abstracted from their territorial settings" (Haggerty and Ericson, 2000: 611), different border and immigration officials can work together via "stretched screens" by being logged into a network of national and international databases, and all kinds of categorizing, profiling, and sorting practices are inscribed into bureaucratic and technological set-ups – thus moving border practices away from the geographical border of the Schengen area to multiple border sites of remote control (Dijstelbloem and Broeders, 2015). Broeders (2007), for example, shows how the development of European information systems, such as the Schengen Information System (SIS), the Visa Information System (VIS) or the European Dactyloscopy (Eurodac), are a technological answer to problems of governing (Barry, 2001). Instead of focusing on physical border posts checking each car, this mode of control focuses on surveying international mobile populations of irregular migrants who are, when re-identified, sorted into different tracks of treatment (Lyon, 2004: 142).

Processes of datafication are tightly connected with what Muller (2010) calls "biopolitical governance". He observes how the focal point of governance shifts away from the territorial borders to the elements in motion – the migrants – who then are assessed in terms of risk. The digitalization of registering migrants as well as biometrics play a crucial role in such a regime by turning individuals into traceable and sortable objects and making the exchange of information between agencies possible (Adey, 2004: 507). In this context, Salter (2005: 47) speaks about "hyper-documentation", as it is the collected and exchanged information about a traveler, which reveals "intentions – risk factors – which the individual him/herself will not reveal". Processes of datafication do not only bring data doubles to circulation but also make them applicable to many different purposes and regimes of governing. Franke (2009) for example shows how the UNHCR pushed the electronic registration of refugees

forward by developing portable workstations, manuals, and validation measurements and sandwiched the data doubles of the refugees with other data. With the help of different applications such as Geographical Information Systems (GIS) the UNHCR then developed tools for a spatial analysis of camps, where geographies and places, different characteristics of populations (such as women and vulnerable people), and incidents (such as rapes) were related to each other. Similarly, Frontex adds up registrations of migrants taking place at Greek hotspots and brings the data together with data from Frontex incident, intelligence, and debriefing reports in order to create maps of migratory routes at the EU's external border, risk analysis for operational planning and reports for the EU Commission and EU member states (Tazzioli and Walters, 2016).

The Greek hotspots are the "entry points" not only for migrants but also for the creation of data doubles in several databases. Data entries are created in the Hellenic Police, HAS, RIS, and Eurodac databases, which lay the foundation for re-identification via passwords – which can be names, identification numbers, or biometrical ones such as fingerprints – at a later time and another place. With that, the Greek hotspots as logistical set-ups realize *multiple data transfers to different governing regimes and enact multiple spacings*, which assign an individual to a specific legal status, to a nation state being responsible and to a territory, where she is (temporally) permitted to stay and thus territorialize migrants each on a European, national, and local level. However, a story can be told about the steps taken for the hotspots to become such a site for data creation and transfer. In 2015, fingerprints were only taken from 8% of the arriving migrants in Greece and inserted into Eurodac database (EU Commission, 2016). As Kuster and Tsianos (2016: 7) point out, deploying Frontex officers to the hotspots was also a way of monitoring and modifying the practices of identification and registration. But there were more problems. Until 2016, datasets for Eurodac could only be transmitted analogously by saving them on an external hard drive and transporting the hard drive via ferry to the Eurodac office in Piraeus. This took time and you could never know if the fingerprints – which were only taken with ink on paper – were good enough for the Eurodac system. It took some implementation work to get Eurodac online at Moria hotspot (Frontex Screener, 2016, personal communication) and Frontex did a great deal to support this by for example purchasing digital fingerprinting machines (Kuster and Tsianos, 2013).

In what follows, we will zoom into the Moria hotspot at Lesvos and give an empirical account of its material set-up with its containers, barriers, and fences as well as of the staff doing registration and identification and the chain of identifying, tagging, processing and sorting. Studying such a site empirically helps both to bring some of the more technocratic and anxious diagnoses down to earth and to see some of the connections between the various transformations of contemporary borders in highlighted detail. We will use the analytic lens of logistics, which allows us to look at how machinery of aligning different organizations, personnel, databases, forms and migrants and processing different channels is set up and maintained. Before we turn to the main empirical part of this paper, we will describe and situate this analytic lens as a concept and heuristic device. In the last part of the text, we will show how the vocabulary of logistics enables us to understand *different modes of infrastructuring* migration and border control and we will discuss further conceptual tools from (Post) Actor-Network Theory that we think can add to the current debate on the politics of circulation and logistics.

Logistics as a concept and heuristic device

A conceptual and methodological warning message is needed before we can focus on the registration practices and related data infrastructures at the hotspots in detail. The analysis

we present is an ethnographic account, and as all ethnographic accounts are, it is a serious but always reconfiguring exercise of "writing culture" (Clifford and Marcus, 2010). The data we use in this particular piece of writing are based on fieldwork that one of the authors is still conducting at Moria hotspot on Lesvos and on a collaborative analysis of transcripts from interviews with Frontex officers, Greek bureaucrats and members of various NGOs as well as of forms, handbooks, and interrogation guidelines used in the registration process. There are three important reasons why we will explicitly not wallow in the well-known "rhetorics of field access" (Meyer, 2013) and refrain from producing ethnographic narratives that give situated accounts of the visual and atmospheric set-up or name key informants by their made up names.

The first reason is conceptual. In this paper, we draw mainly on Actor-Network Theory (ANT), an approach from the interdisciplinary field of STS that has prominently stressed the role of non-humans – devices, procedures, circumstances, even scallops (Callon, 1986), and microbes (Latour, 1993). Although ANT has moved away from stories about non-humans and turned to questions about the political ontology of devices and other entities and the multiplicity and heterogeneity of infrastructures, this conceptual legacy urges us methodologically towards a "sociology after humanism" (Breslau, 2000). Ethnographic narratives about informants at least have to be symmetrically supplemented by narratives about the devices and circumstances in place. We will come back to some of the conceptual avenues for further analysis beyond the scope of this paper at the very end.

The second reason is methodological. We use logistical terms in this article as an epistemological and alienating device (Hirschauer and Amann, 1997) to carve out the organization of labeling and tagging, localizing, moving and caring for people at the Registration and Identification Center (RIC). With logistics we refer to "the management of the movement of people and things in the interests of communication, transport, and economic efficiencies" (Mezzadra and Neilson, 2013: 206), and we use these terms intentionally as rhetorical tools to produce accounts that stick to the devices, technologies, procedures and categories, data, identities, forms and bodies that are produced, circulated and thereby transformed, aggregated and assembled in very specific ways. We are fully aware of the cold and maybe even terrifying impression that such a language might create – especially when we are dealing with migration and the personal and collective sorrow, grief, and despair that many practices of migration and border control constitute. Nevertheless, we use these terms to create a narrative that is as far away as possible from the accounts that populate our media ecology and the consternation and outrage that fuel the current public debate. Instead, it helps us focus on the bureaucratic details of the management of and the care for the flow of bodies and data at the hotspot.

The third reason is empirical. There is a growing body of evidence that logistics has grown out of a niche existence as a field of specialization and expertise and an auxiliary service and has conquered some of the most consequential production sites of contemporary social order during the last three decades. We are increasingly living in "logistical worlds" (Rossiter, 2014) organized by "tracking and tracing" (Kanngieser, 2013) that "calibrates and co-ordinates movements across different borders, taking into account the varying conditions that apply across them" (Neilson, 2010: 133). We have reason to suppose that logistical practices are at the core of the contemporary machinery of governance – the way that registration practices and related data infrastructures at the hotspots are organized is a telling example.

Logistics of the Registration and Identification Center (RIC) at Moria hotspot

In the introduction of this paper, we sketched how the hotspot approach is conceptualized in EU policy and how different scholars in critical security and migration studies connect the hotspots with different modes of governing. In this section, we will focus on one of the implementation sites, the RIC at Moria hotspot on Lesvos in Greece, and examine how people and data are processed and sorted into different channels by creating different data identities as a practical accomplishment.[1]

Moria camp is located in the south-east of the island and ca. six kilometers away from the island capital Mytilini. It was built in a former military camp and is surrounded with fences, walls, and gates. The main entrance is guarded by Hellenic Police officers and RIS staff. However, it is open for people living and working in the camp. In the camp, you find several residential areas, which are ethnically separated, and a kind of central road with small stores and stalls leading to a central place with benches, an information point and a distribution point for non-food items, as well as to a heavily fenced area of the HAS and EASO. Moreover, there are closed sections guarded by Hellenic Police for people to be repatriated and for unaccompanied minors. And finally, there is the so-called RIC, where arrivals are first brought by buses from all over the island in order to be identified and registered. This is the place the paper is about.

The busses transport the migrants to a closed area with a big tent and a system of seven containers used for basic registration purposes as well as a first contact point with various NGOs (see figure 1). There is only one entrance and one exit gate, both guarded by Hellenic Police, and only people who need medical treatment in a hospital and those who have gone successfully through the registration and identification procedure may exit the area. The arrivals are split into smaller groups and fed, almost tayloristically, in a "registration street" – a term commonly used by Frontex officers on site. The procedure is split into several distinct steps, and each step is carried out by one specialized team in one container. Frontex officers as "screeners" and document experts called "ALDOs" identify the arrivals. Then Frontex "fingerprinters" generate fingerprints and set up data profiles in several databases. Subsequently, Greek RIS staff creates legal documents while MdM is responsible for medical screening, inter alia to separate the so-called vulnerable cases from the others. Finally, the procedure ends with RIS sorting and channeling those newly registered and referring them to different authorities. Police decide on a grade of freedom of movement, and then "the migrants are ready to get out of the system" (Coordinator RIS, 2017, personal communication).

To facilitate counting, arrivals are usually equipped with a colored wristband marked with a number. The color marks them as one cohort, a number consecutively counts and queues them – first in, first out. The size of the incoming batch has to match the registered batch at the end of the procedure. By that, incoming people are transformed into logistical entities like cohorts and single "stock keeping units", and a monitoring mechanism of numbers of in- and output is installed. In the big tent – the first station for the arrivals – basic information, food and drinks and a quick medical triage is provided. It is similar to a "deposit" (Kemp and Young, 1971: 31), as groups of people are kept for further transportation at one place and divided into smaller units by a Greek police officer who, as a "flow manager", then forwards the units one by one through the different stations of the identification and registration procedure. She also makes sure that migrants and documents stay together.

The analytics lens of logistics allows us to make sense of these processes and practices. Logistics is about the organization, standardization, and stability of processes that deal with

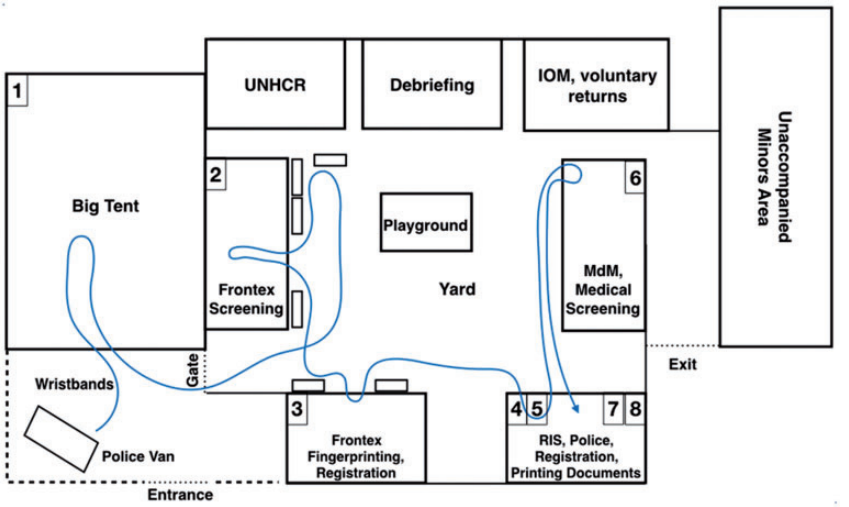

Figure 1. Registration and identification, Center Moria, October 2016.

flows and with entities that move. Whatever is stored, it is only contained to enable further processing. In exactly this way, grouping and monitoring are not just practices of detainment, they are part of an arrangement of managing continuous flows of people that are treated as of the same kind. However, as Frontex officers stationed on Lesvos in 2016 told us, arrivals often did not wear any wristbands. Instead, numbers on pieces of paper were handed out and those to be registered were called into the containers one by one. Sometimes there was not any numbering at all, and the arrivals negotiated amongst themselves who was next. On hot summer days, people often did not wait in the big tent, but were taken directly to the yard to sit down under a big awning and wait for registration. Sometimes hundreds of people were sleeping, talking, and playing there. It also sometimes happened that the big tent was still occupied by arrivals of the day before, as housing in Moria camp could not always be organized that quickly. All these cases show that the logistics only work if the arrivals cooperate – for example, by waiting patiently and paying attention to who is next or who might need help. Dockets and routing slips, for example, are not just attached by officers and flow managers, but are collaboratively produced. We will turn to this procedure in the next section.

Enacting truthful subjects and valid identification in Frontex screening procedure

The first step to enact a governable migrant subject is to produce and enact a valid identity. This is done in the screening section. The container is equipped with four tables with one Frontex Screener and one Frontex Interpreter each and another table with a Frontex Document Expert and a Frontex Interpreter. All incoming migrants are screened, one by one, except accompanied minors under 14. Screening is about creating and enacting characteristics of the arrival, which decisively prepares the grounds for the further institutional procedure. The core problem of screening is to discern a valid identification, even against contradictory claims by the interviewed migrant and often without having any "hard" verifier like passports or birth certificates (Coordinator RIS, 2017, personal communication).

Table 1. The process of identification and registration, Moria, October 2016.

	1	2	3	4	5	6	7	
Action	Handing out colored wristbands, providing information, food and a medical triage	Creating migrant's identity	Taking fingerprints from migrants and entering data	Entering identification number in RIS database, transmitting data	Printing out documents	Medical and vulnerability check, filling out documents	Completing data set and finalizing documents	Sending referring-documents to different state-agencies
Actor	RIS, UNHCR, Médecins du Monde (MdM), Hellenic Police	Frontex Screener, Frontex Interpretor, Frontex ALDO	Frontex fingerprinter	RIS	RIS	MdM	RIS	RIS, EKKA, Hellenic Police
Form		Identification form	Signed identification form	Signed identification form with Hellenic Police identification number	Foreigner's medical card, restriction of liberty card	Filled out foreigner's medical card, vulnerability certificate, psychological record and social record	Filled out and stamped foreigner's medical card and restriction of liberty card	
Database			Hellenic Police database, Eurodac	RIS database, HAS database	RIS database	MdM database		

A form is used in this screening process, which is composed of a limited number of classifiers that have been added and modified repeatedly. The current version encompasses 11 obligatory items like "language", "name", "date and place of birth", "address" and "nationality" or "willingness of applying international protection", and six "additional items" like "vulnerable group", "owner of passport", "reasons of flee" or "final destination". Identification is completed when the obligatory items are filled out, concluded as valid, and authenticated by the parties involved. One screener, one interpreter, and the migrant being interviewed, as well as different indication tools are involved in the screening arrangement, which very much resembles an interrogation (Frontex Screener, 2016, personal communication). Multiple indicators in combination are supposed to give hints as to if the interviewees are lying (Frontex Screener, 2017, personal communication). The interaction keeps going, as long as the screener doubts statements of the interviewee. In this process, the interviewed migrant gives more and more information about a life that she claims to be hers.

The migrant subject is enacted in this continuum between registration and investigation. If, for example, a valid passport can be shown, then the screening is over in five minutes, as the document can state who the migrant is. Neither biographical, local nor cultural knowledge is needed. But in case of a lack of such testifiers, a subject is enacted, which stands "behind" the statements as a guarantor, which has to be acknowledged as truthful (enough). The screening is very much about finding this subject at the end, which is accounted as not-lying (Frontex Screener, 2016, personal communication) and trustworthy, and which is able to furnish particulars on the items on the identification form. In the screening interviews, this occurs often when the interviewed migrant makes a confession at the end and reveals where she "really" is from (Frontex Screener, 2017, personal communication). The process of constituting a subject accounted as trustworthy is a result of a collaborative effort, but this collaboration is asymmetrical by design.

Finalizing identification – Filling out the identification form

It is the screener who decides how the identification form gets filled out. Once she feels sure about who the interviewed migrant actually is, she inserts discrete and unambiguous items. The identification form consists of different sections: a header, boxes for a profile picture and for the language spoken, then a battery of items in a table giving details of the interviewed migrant, signatures and a list to name accompanied minors as well as a space for additional notes. Objections, differentiations, or negotiations of the screening process are invisiblized in the form – or silenced by using residual categories (Star and Bowker, 2007): if the interviewee is not willing to cooperate and the screener does not know at the end where she is coming from, the screener fills in "unknown" (Frontex Screener, 2017, personal communication), and if the interviewee is willing to talk, but the screener is unable to come to a conclusion about her nationality, the screener can enter "not identified" (Frontex presentation, 2016, personal communication). Moreover, the new version of the identification form draws a distinction between "claimed" and "presumed" nationality, where both answers can be entered even if they contradict. However, the final decision on the nationality is delegated to the RIS later on, which decides in favor of the Frontex Screeners and in absence of the migrants. By doing this, the identification is finalized, fixed as well as authenticated and it becomes the basic scaffolding of a migrant subject after leaving the registration procedure.

The identification form, with its collected characteristics of the migrant, serves as a blueprint and a backup for further digital identities produced on this registration and identification track. This again is a logistical operation: instead of working with the sorted and

stored items, logistics as an efficient technology and an epistemic field of optimizing and controlling flows works with data and representations. Forms are sorted, stored, and counted, and data from these forms is rearranged, recalculated, and aggregated while the items themselves can either be kept in one place or moved around. The materiality of this paper-based form guarantees immutability because it is authenticated by a fixed structure of reference, which makes it a packing unit for transport and circulation that is not further divisible. It ensures the surveyed characteristics are bound to a name and to a migrant subject represented by their signature, but also that the screening procedure has been processed, finalized and accepted by the signatures of all parties involved.

By the end of the screening procedure, an identity of the screened migrant has been set up consisting of a set of predefined categories. Its characteristics are limited and discrete and are materialized and preserved in the paper-based identification form. Confirmation and authentication by the Frontex Screener, Frontex Interpreter and the screened migrant make this form to a warrantor of the only valid identity and let the administrative procedure continue. However, the actor-network of screened migrant, identification form, and flow manager only build a loose connection between the stated identity and the body of the migrant.

Enacting data identities in Hellenic Police database application

In the next container, some of the data collected on the identification form is inserted into several databases and applications, namely of Hellenic Police, Hellenic Asylum Service (HAS), Registration and Identification Service (RIS) and European Commission, and different identifiers are attached. As we will see, these registrations build the basis for subsequent administrative work by enacting *several data identities,* which can be linked to the respective migrant body at different places and times and for different purposes. This is the prerequisite for a dispersed form of control, carried out by several agencies. In the following section, we will sketch the registration processes in the different databases and examine how and in which forms data identities and migrant subjects are enacted.

A Frontex officer takes a portrait picture of the migrant, copies it on her computer's desktop and starts entering the characteristics from the identification form into single entry fields of the national web-based database Kartographisi Kikloforias Allodapon (Mapping of Foreigners' Circulation) of the Hellenic Police. As neither the signatures of the interviewed migrant, interpreter, and Frontex Screener nor the names of the latter two are entered in the database, the references to the construction site of data are cut. Instead, after inserting all entries, the photo is uploaded and added, and the data entries are linked with an identification number – an identifier, which is then also noted on the identification form by hand (Frontex Fingerprinter, 2017a, personal communication).

Migration from paper form to database turns out to be complicated and potentially error-prone, as the Hellenic Police system is only available in Greek and with Greek letters, which only a few Frontex officers can read and use (Frontex Fingerprinter, 2017b, personal communication). To register someone, most of the Frontex officers therefore do this in a parrot-fashion way of just clicking through the system. In cases of mistakes or wrong clicks Frontex officers often need assistance from a Greek police officer from another container. An informant told us that often there is a match between the new data entry and other data entries within the Hellenic Police database. In such a case, the screen lights up in red and a list of entries pop up in a window. Then Frontex officers also have to bring the Hellenic Police in. As a hit too often turned out to be a false alarm, Greek officers got annoyed and Frontex officers started to ignore the alert (Frontex Fingerprinter, 2017a, personal communication).

Feeding databases is crucial for logistics. Single characteristics of the fixed set-up on the identification form are turned into packing units that can, as data, be mobilized, moved around, and reassembled. Standardized entries next to other entries in an information system are much more compatible and connectable to bureaucratic practices. They can be searched, accessed, and modified easily at different points in time and space. As additional data can be inserted also from somewhere else and at a later time, data identities can grow and change over time and a biography of incidents and encounters can emerge.

However, data identities are not just there in the database, they need to be enacted by identifiers. Identifiers are for example a name, a number or fingerprints, and they link data to a dataset. In our case, a profile of an individual, what we call a data identity, is enacted. Identifiers are crucial for all kinds of logistical set-ups, as they make datasets traceable and connect (digital) addresses to entities such as bodies or goods (Dodge and Kitchin, 2005). In the Hellenic Police database, there are identification numbers used for all different kinds of entries, not only for those of illegal border crossing. As identification numbers are consecutive, they ensure that one number enacts one and only one data identity. Numbers are more precise and reliable than names, as the latter could be misspelled with troubling consequences. The entry, for example, could not be found in the future and duplicate entries could be created, or different registrations under identical names could cause commingling of data in subsequent procedures. That is also why the identification number is on the temporary ID ("operational note") which states the suspension of deportation for 30 days and is handed out to the migrant at the end of the overall procedure.

With their registration in the Hellenic Police database, individuals can be re-identified at different re-identification arrangements, for example by police at airports or police stations, but also by mobile units. In the process of checking ID-documents and crosschecking the data with the police database, the individual is urged to give an account about who she is. In case of a match in the database, a digital identity is enacted, which verifies or falsifies the account of the screened. Re-identification of people being registered on Lesvos and having a temporary and territorially restricted ID also turns out to be a localizing tool which basically says: "You are A, you have been registered in X and you are allowed to stay in Y. But you are here in Z, and that is why you have to go back to Y". In such a case, the screened will be searched, arrested, and readmitted to the initial place where the migrant was registered for detention (Hellenic Police, 2016: 3).

Enacting data identities in European Dactyloscopy (Eurodac)

After completing the data entry from the identification form into the Hellenic Police system, the Frontex fingerprinter clicks on a button labeled with "Eurodac". A program opens and guides through the fingerprinting procedure, displaying one finger after another. The scans are automatically checked if they are good enough. If the screen lights up red – which happens quite often, as informants told us – the scan has to be repeated. In most cases, however, the quality of the fingerprints is judged by the system as "sufficient" and the screen flashes yellow. In only very few cases is the scan evaluated as "good", which would cause a green flash. If some fingers, or even the whole palm, is missing due to amputation or injuries, it is quite tricky to enter that information into the system. The Eurodac application is rigid in that regard: it needs to be fed with a scan in order to move on to the next step, the next finger or palm. Frontex staff deals with that by scanning any other finger or the other palm. When all fingerprints are taken, the fingerprinters click on "confirm" and the fingerprint data along with some other data automatically added by the system is sent to the Eurodac office in Athens.[2] After some time, which could take a few minutes or up to an hour, the

screen lights up green, data entry is marked as successful, and a Eurodac identification number is added to the dataset linked with the identification number (Frontex Fingerprinter, 2017a, 2017b, personal communication).

The idea of Eurodac is that national asylum and immigration services, and since 2013 also police authorities of EU member states and Europol, can check if a migrant has already been registered by another member state (European Commission, 2013: 9) by processing a re-identification procedure. Fingerprints are used as identifiers that turn parts of the body into "stigmata – signs on the flesh" (Van der Ploeg, 1999: 301) corresponding to the pattern of an image in a database. They are used to make bodies accountable without needing to rely on a subject participating in the collaborative process of identification – for example, by claiming who someone is and where someone comes from. Kuster and Tsianos (2013) speak about bodies, which are made legible without the need of making somebody intelligible. When fingerprint images are uploaded to Eurodac, they are automatically matched to all other representations of fingerprints in the database. In the case of a hit, a data identity from the database is enacted.

In contrast to systems, like the national police or national asylum databases, that keep track of a case history which can be modified, extended or linked with additional records and events, data identities enacted in Eurodac are only about making the starting point of a migrant's history within the institutional route of the EU visible. They refer to the "date on which the fingerprints were taken", "date on which the data were transmitted to the Central System", or to the "Member State of origin, place and date of the apprehension" (EU Commission, 2013: 11). The enacted data identity also leaves a trail to the data entry within the Hellenic Police database, as it includes the "reference number used by the Member State of origin" (EU Commission, 2013: 11), which is in our case the identification number of Hellenic police database. Except from "sex", personal characteristics such as name, nationality, date of birth, and the like listed in Hellenic Police database are not included.

Not only does the data-identity in Eurodac enacted by matching fingerprints look different than in the Hellenic Police database, but so does the form of addressing a subject. In the case of a hit, it basically says: "we identify you, even though we do *not* know you. And we do *not* need to know you. You are *not* allowed to be here, and we are *not* responsible for you". It addresses the fingerprinted subject ex negativo. The subject constituted in such a re-identification arrangement is a rejected one, excluded from further registration and casework because it is traced to a registration that has already taken place by another authority, which is held responsible. In other words, with the data upload to the Eurodac-database and using fingerprints as identifiers, a stigma is placed which binds body and identity to the registration site at Moria. It enacts a bond between identity and the registering authority and aims at rejecting migrant subjects from all other sites outside of Greek territory and within the EU.[3]

RIS: Finalizing ID-entities and sorting migrants

While Frontex officers take care of the registration in the Hellenic Police and Eurodac databases, RIS personnel is responsible for the registration in the RIS database. Frontex officers add the identification number for the Hellenic Police database manually to the paper-based identification form, along with two "secret" signs like a circle and a triangle to confirm that Frontex identification screening and registration have been finalized. Then the identification form is handed over to RIS personnel, who have been working inside the fingerprinting container at separate tables equipped with their own computers

since June 2016. As far as we could find out, Hellenic Police, RIS, and HAS have one common web-based platform with three different database applications, one for each organization. Each application can approach data with some restrictions and on a need-to-know basis. As the identification number from the Hellenic Police database is written on the identification form, RIS staff types it into their own application and the data attached to the identifier pops up. RIS data identity is enacted with an additional identification number, numbering all first reception cases consequently. In case the "willingness for applying international protection – yes" is stated on the identification form, RIS staff is supposed to tick a similar box within the RIS online application. By doing this, HAS staff has access to these datasets, too. In contrast to the police and HAS databases, the RIS database is not built for piling up a case history, but rather for providing a basic identity as a backup for the other institutions with all the relevant data stored for subsequent procedures. It thereby has to be kept updated, for example, if it turns out that certain characteristics like nationality, age, or vulnerability have to be changed. RIS is also responsible for archiving the paper-based identification forms.

After creating a RIS identification number, RIS staff copies the data and puts it into various templates such as the "Foreigner's medical card" and the "Restriction of liberty card", which are then printed out and handed over to the migrant accompanied with the admonition of not losing it. These two documents are used as identification papers at the hotspot. Migrants should carry them all the time and agencies require them for any kind of service. The migrant with the "Foreigner's medical card" is sent to the MdM container for medical screening. A nurse fills out the medical card and inserts the characteristics in the MdM database, issues a vulnerability certificate, and sends card, certificate, and migrant back to RIS staff. There the vulnerability certificate is taken and its characteristics are inserted into the RIS database. With that the RIS data identity is officially completed. The "Restriction of liberty card" is the official document which attests not only name, gender, nationality, and a facial image but also the illegal entering in Greece and the temporary suspension of deportation (Kuster and Tsianos, 2016). Equipped with a set of identifiers (name, face, Hellenic Police identification number), this ID-entity makes it possible to enact its digital counterparts in the Hellenic Police, RIS, and HAS databases. At the same time, it subjectifies its carrier by stating a name, date and place of birth, sex, and legal status. At the end it is stamped by Hellenic Police and the tie between body and identity is certified officially. In other words, this initiation act incarnates a legalized subject accredited as a non-asylum applicant, as asylum applicant or as vulnerable, that will go through the following procedures, and that can officially be moved or kept in place.

Besides updating and finalizing identities, handing out ID-entities and enacting legalized subjects, RIS additionally produces official referring-documents assigning responsibility to other authorities. Identities on the transferring document with the item "Willingness of applying for Asylum: No" are sorted into the category "Non Asylum Applicant" and forwarded to the Hellenic Police, identities with the item "Willingness of applying for Asylum: Yes" are sent to the HAS and those classified as vulnerable by MdM go to E.K.K.A. (National Centre for Social Solidarity). For those who are classified as unaccompanied minors, RIS remains in charge. The documents produced by RIS go to the other agencies via email and as paper forms, forwarding responsibility to the other organizations. With that, the registration and identification procedure is completed and people are sorted into different institutional tracks, which produce "asymmetries of mobility and exclusionary partitions" (Tazzioli, 2017: 2769).

Modes of infrastructuring migration and border control and the politics of mobility

In the previous sections, we examined the logistical set-up of the RIC at Moria hotspot. The question that guided our analysis was: How do processes and practices at the hotspot make people governable and containable at the site, and at the same time how are processes and practices organized so that (re)identification and control is distributed to actors at other sites by multiplying data identities within information infrastructures? By following the flow of people and data through the RIC at Moria hotspot, we reconstructed how *several* migrant subjects are processed in different channels: on the one hand, data entered into the Hellenic Police database are used to re-identify a registered migrant – for example at local police stations or by mobile units. This enacts a migrant subject, identified and confronted with whereabouts fixed during registration and subjected to relocation and law enforcement. It is invoked by a reminder: we remember who you are, where you should be, and where you belong. Data entered into Eurodac, on the other hand, enact a migrant subject by denial: whoever you are, we are not responsible for your fate – a different authority is. Data entered into the RIS database are used to finalize an official ID-entity – a legal entity establishing an identity by handing out an official, if only temporary, document. It is also used as a blueprint for the various institutional channels that follow registration: repatriation, asylum process, vulnerability assessment, and the like. That way individuals cannot only be localized at Moria hotspot in a local arrangement but also by many other trans-locally organized re-identification arrangements set up by police, asylum, and migration services of EU member states. In this sense, the hotspot as a logistical set-up organizes several data registrations, which enact multiple spacings on the local, national, and European level.

As we can see, the circulation both of people and data operates by set-ups where not only a variety of actors but also different infrastructures and information systems are interconnected. This empirical account of the local set-up and of the practices of connecting, forwarding, and making fit also contributes to recent works on "politics of mobility" (Squire, 2011) by conceptualizing circulation in terms of infrastructure (Xiang and Lindquist, 2014) and logistics. In such an understanding, mobility is viewed as an effect of "infrastructural moorings" (Urry, 2003). In a programmatic paper, Lin et al. (2017) emphasize and encourage a perspective that "shifts away from the people who move (as most migration and mobilities research tends to fixate on) towards those human *and* nonhuman actors that move migrants within specific infrastructural frames" (169). Firstly, they stress the productive power of infrastructures in both articulating and conditioning a complex system of mobilities and immobilities and in building up "different trajectories at different times and spaces" (Xiang and Lindquist, 2014). Secondly, they make the point that infrastructures are highly political as they configure actors, elements and their relations, organize access, incorporate political agendas, and treat some issues as irrelevant (Rodgers and O'Neill, 2012). And finally, they opt for scrutinizing infrastructures not in a deterministic way as operational systems but as processes of infrastructuring.

Turning to a vocabulary of logistics, we argue, enables us to understand *different modes of infrastructuring* and how exactly the movements of people and data are organized by working through all kinds of "differences, gaps, conflicts and encounters" (Mezzadra and Neilson, 2013) and coordinating all kind of actors, organizations, and databases. In the case of the hotspots, this complex set-up is made possible by assembling all the entities involved *in one place* and by organizing very mundane practices such as filling out forms, taking fingerprints, signing and archiving paperwork and entering and copying datasets along a

very distinct logistical process – *a chain*. The chain moves not only migrants through containers, produces identities and data, and sorts files, cases, and fates into distinct institutional channels but also manages to coordinate different staff of national, European, and nongovernmental agencies. Each officer has to process one specific task within a sequentialized work process. Each outcome of a step is put into a form, and via the circulation of forms the process is monitored. Moreover, in this process database applications *are made* interoperable by explicitly unlocking parts of the data, by manually writing identification numbers on paper-based forms and by enriching the data with identifiers such as photos, fingerprints, numbers and names as well as with case histories or status indicators.

This understanding of logistics as a lens to conceptualize modes of infrastructuring as practices of chaining things, people, and data through time and space can be pushed even a little further by referring to recent work in STS, more precisely in "Actor-Network Theory and After" (Law and Hassard, 1999) or "Post-ANT" (Gad and Jensen, 2010). This is not the place for an in-depth conceptual discussion, but we think that it might be useful for further work on politics of mobility, infrastructure, and logistics as well as on border and migration assemblages to highlight three fruitful avenues for further research and conceptualization.

Firstly, ANT focuses on "how local events tie up with one another" (Michael, 2017: 25) and thus brings chaining activities across different actors and sites into view. It also analyzes local settings but additionally asks how they are extended in time and space through networks (Latour, 1996a). Studying "control assemblages", "logistical spaces" or "spaces of containment" thus means to not describe them from a bird's-eye view as homogeneous macro-structures characterized by functions and logics but from a perspective which is right in the middle of events and which examines how distant pasts, faraway places and absent actors are made present in situations and how situations lead to other points of time, places, and actors.

Secondly, Post-ANT critically inquires seemingly stable entities such as subjects and objects as well as bodies, technology, markets, and states. Law (2008: 635) recommends turning to a "sociology of verbs" to understand how networks and their material and semiotic elements are enacted through practices in heterogeneous and multiple ways (Passoth and Rowland, 2010: 827). How these multiples (Mol, 2002) are brought together coherently, or if they are at all, is not only a practical matter but also an achievement which can change over time (Law, 2007: 13). Such thinking has already gained some traction in critical migration and security studies. Amicelle et al. (2015) for example emphasize a focus on devices – which they understand as "non-linear result[s] of struggles, controversies and translations" (297).

Thirdly, ANT has developed concepts for describing struggles, competition, and re-translation activities in building actor-networks. Entities can refuse being enrolled any more (Callon, 1986), re-translate relations or forge new alliances (Latour, 1996b). Such an approach does not only focus on the objects and subjects being brought to circulation – in our case migrants, forms, and data – but also on the relations among the actors which make circulation possible. Andersson (2016) for example draws on Callon's (1986) concept of enrollment and gives instructive insights of how the Spanish Civil Guard could extend its power, facilitate information flows, and expand cooperation in an asymmetrical way by mobilizing different actants for the projects Seahorse and Eurosur (Andersson, 2016: 34f.).

Finally, (Post)ANT shows how power and forms of subjugation, resistance, and subversion are located right in the middle of actor-networks. An analysis of infrastructures of migration and border control, which takes into account how absent events and actors are made present in local settings, multiplicities are enacted, and actors are enrolled, grounds a

critical inquiry in specific material set-ups. But it also makes it more complex, as multiple forms of power relations have to be carved out. If infrastructure is understood as a multilinear ensemble with different lines, variations, bifurcations, and derivations, then a critical inquiry also could be conceptualized as a multiple bringing different accounts of subjugation, resistance, and subversion together. Although this was not the scope of the paper, as we tried to develop a detailed empirical account of the logistical processes, it hints at some issues such as the enactment of multiple data identities and subject positions, or asymmetries between screeners and migrants as well as between Frontex and Hellenic Police officers. This could be a starting point for further investigation.

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Notes

1. Even though there are many variations and differences between the hotspots in Greece and in Italy, we think that they all have specific features in common: hotspots identify, register, and sort migrants and they generate data-doubles in several databases and create cases and responsibilities assigned to national agencies in one place.
2. For how complicated and complex the implementation of Eurodac has been, and how far away it is from running smoothly, see for example Kuster and Tsianos (2013).
3. However, the readmission to the responsible member state is suspended in multiple ways. For example, in 2011 the European Court of Human Rights (ECHR) decided that conditions for refugees in Greece would be untenable and hence repatriation a violation of the European Convention on Human Rights (Tsianos, 2015: 194).

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Paper 2

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Summary and Contribution

The so-called hotspots—identification and registration centres on the Aegean Islands in Greece and in Italy—are not only sites of remote detention, European intervention or differential inclusion, but also logistical set-ups, where data is generated and spread across state institutions. Such socio-technical assemblages are hard to research not only because of state actors' desire to keep things secret but also because of methodological issues. How does one disentangle their extensive, complex and rhizomatic nature? Which trajectories does one follow and which actors and voices does one assemble? Following recent work in the realm of STS, methods are understood as (b)ordering devices, which performatively enact an ordered world and produce accounts of the social, including some realities while excluding others. This article considers mapping a well-suited method for studying widespread socio-technical assemblages, but only if it is handled with caution. Based on an empirical inquiry into the Moria hotspot and following a praxeographic research approach, different types of small maps are developed that enfold complexity by being attentive to situatedness, symmetry, multi-sitedness and multiplicity. Furthermore, it emphasizes an on-going process of reflexive inversion of the mapping process that makes the crafted accounts contestable and its boundaries and blind spots visible. Finally, the article discusses how mappings can be used not only as research but also as a political device that contributes to the work of other collectives beyond the scientific production of truth.

All steps of the paper including fieldwork, data collection, data preparation, analysis, conceptual work, and publishing have been conducted by Silvan Pollozek.

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Article

Mapping European Border Control: On Small Maps, Reflexive Inversion and Interference

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Abstract
The so-called hotspots—identification and registration centres on the Aegean Islands in Greece and in Italy—are not only sites of remote detention, European intervention or differential inclusion, but also logistical set-ups, where data is generated and spread across state institutions. Such socio-technical assemblages are hard to research not only because of state actors' desire to keep things secret but also because of methodological issues. How does one disentangle their extensive, complex and rhizomatic nature? Which trajectories does one follow and which actors and voices does one assemble? Following recent work in the realm of STS, methods are understood as (b)ordering devices, which performatively enact an ordered world and produce accounts of the social, including some realities while excluding others. This article considers mapping a well-suited method for studying widespread socio-technical assemblages, but only if it is handled with caution. Based on an empirical inquiry into the Moria hotspot and following a praxeographic research approach, different types of small maps are developed that enfold complexity by being attentive to situatedness, symmetry, multi-sitedness and multiplicity. Furthermore, it emphasizes an on-going process of reflexive inversion of the mapping process that makes the crafted accounts contestable and its boundaries and blind spots visible. Finally, the article discusses how mappings can be used not only as research but also as a political device that contributes to the work of other collectives beyond the scientific production of truth.

Keywords
issue maps; methods as ordering device; Moria hotspot; praxeography; situational maps; social world maps; trajectory maps

Issue
This article is part of the issue "Method as Border: Articulating 'Inclusion/Exclusion' as an Academic Concern in Migration and Border Research in Europe" edited by Kolar Aparna (Radboud University, The Netherlands), Joris Schapendonk (Radboud University, The Netherlands) and Cesar Merlín-Escorza (Radboud University, The Netherlands).

1. Introduction

The so-called hotspots—identification and registration centres in the Aegean Islands in Greece and Italy—are not only sites of detention (Dimitriadi, 2017), European intervention (Kuster & Tsianos, 2016) or sorting centres (Campesi, 2018), but also logistical set-ups where data is generated, inserted into different chains and spread across state institutions (Pollozek & Passoth, 2019). Such socio-technical assemblages of migration and border control are hard to research not only because of several strategies that attempt to keep things secret or hidden but also because of methodological issues. Considering the number of agencies and their representatives, the many different forms and databases and the many sites and phenomena that are also related to the 'hotspot approach,' the question arises concerning how to study such an extensive, complex and rhizomatic subject. Following recent work in the realm of STS, methods are understood as (b)ordering devices which performatively enact an ordered social world and produce accounts of the social, as well as its components and attributes (Law & Ruppert, 2013). As such, some (partial) realities, actors and problems are made present while

others are made absent. Which trajectories does one follow and which actors and voices does one assemble?

This article considers mapping a well-suited method for studying geographically widespread and temporally fluid socio-technical assemblages and for drawing multiple actors, issues and materialities together (Dalton & Mason-Deese, 2012, p. 445), but only if it is handled with caution and situated into a reflexive ethnographic research approach. Instead of crafting big maps that turn complex phenomena into simple schemes, silence voices, and produce matters of regulation or surveillance, this article opts for creating many small maps that enfold complexity by being attentive to situatedness, symmetry, multi-sitedness, and multiplicity. In the following, the article develops a mapping approach that is able to disentangle the extensive, complex and rhizomatic nature of migration and border control assemblages while at the same time being reflexive about how mapping performatively orders the social, navigates through a complex field, orchestrates voices and opens up realities for interventions. With this genuine focus on methodology and methods, the article aims to contribute to the current discourse on migration infrastructures and digital migration at the intersection of STS and critical migration and border studies.

Starting with a critique on a large map of the hotspot approach, this article will outline a small map approach that uses Adele Clarke's cartographic approaches as a starting point but pushes them towards a praxeographic methodology that focuses even more strongly on socio-technical practices as well as on situated, processual and multiple becomings of human and non-human entities and orderings (Mol, 2002). Based on an ethnographic inquiry of the Moria hotspot on Lesvos between 2016 and 2018, this article will sketch out different mapping approaches—situational, social world, trajectory and issue mapping. In an on-going process of reflexive inversion, it will make the boundaries of the mapping processes visible, criticize their orderings and use the blind spots they produce for (re)directing the subsequent research process. In the end, the article will ask how mappings can be used not only as research but also as a political device that contributes to the work of other collectives beyond the scientific production of truth (Law, 2004).

2. Situating Mapping in Praxeographic Research

In July 2015, the EU Commission released an explanatory note to the hotspot approach, which had been introduced in the context of the EU Commission's European Agenda on Migration two months earlier. The explanatory note gives details about what a hotspot is, how coordination takes place on the ground, what kind of support could be provided and what "added value" the hotspot approach could have (EU Commission, 2015, p. 5). Additionally, it introduces "two roadmaps on the practical implications" sketching out "who is doing what" (EU Commission, 2015, p. 10) and one 'hotspot approach' flowchart (Figure 1). The flowchart especially has been picked up by media (e.g., Der Standard), political (e.g., House of Lords) and EU actors (e.g., European Court of Auditors) because it was the only document back then that produced a first picture of the architecture of a hotspot with its actors, procedures and components.

This map brings together several actors in boxes via unilateral arrows that lead from one beginning to several ends. Even a first grasp of the map makes obvious that the bordering of migrant subjects is accomplished by a heterogeneous set-up shaped by such disparate things as agencies (Europol, Frontex, EASO), databases and technical systems (Eurodac), policies and measures (Consolidated version of the Treaty on the Functioning of the European Union, 2007, Art. 78[3]), practices (debriefing, registration/identification, refusal of fingerprinting, risk analysis), further procedures and locations (detention, relocation, return, transfer, etc.), responsibilities (member state [MS]) and switching points ("wish to apply for asylum—yes/no").

The ends of this map show various mechanisms of social sorting and both inclusion and exclusion ranging from "grant of international protection" to "relocation" to the "transfer to responsible MS" or "return." We can say that these different institutional tracks also differ due to the rights and entitlements migrants have concerning residency, housing, health, education, work and other social services. In this sense, the hotspot approach produces many different variations and graduations of migrants' status, which is characteristic of contemporary border regimes and termed differential inclusion (Mezzadra & Neilson, 2013).

The map also makes us realize that bordering manifests not only in the camp but also "elsewhere," for instance in the Eurodac database or at the headquarters of Frontex and Europol. Recent work in the realm of science and technology studies has pointed to the distributed activities of listing, labelling and categorizing within institutional ecologies and to the technical mediations concerning remote surveillance and control through interconnected and meshed up databases (Dijstelbloem & Broeders, 2015).

More than anything, the map produces a normative account of how things should work in this very organizational setup. It enacts an idealization of one big procedure which appears as functioning and seamless without frictions. Each actor has its role, the collaboration between organizations is defined, databases, organizations and humans are intertwined, and all procedures are lawful. It favours a clean technocratic solution that leaves out messiness, suffering, human rights and other issues—complexity. With this map circulating among policy and security actors, a powerful version of the hotspot approach has been enacted.

Latour (2005, p. 187) terms such maps panoramas. Panoramas see everything and nothing "since they simply show an image painted (or projected) on the tiny wall

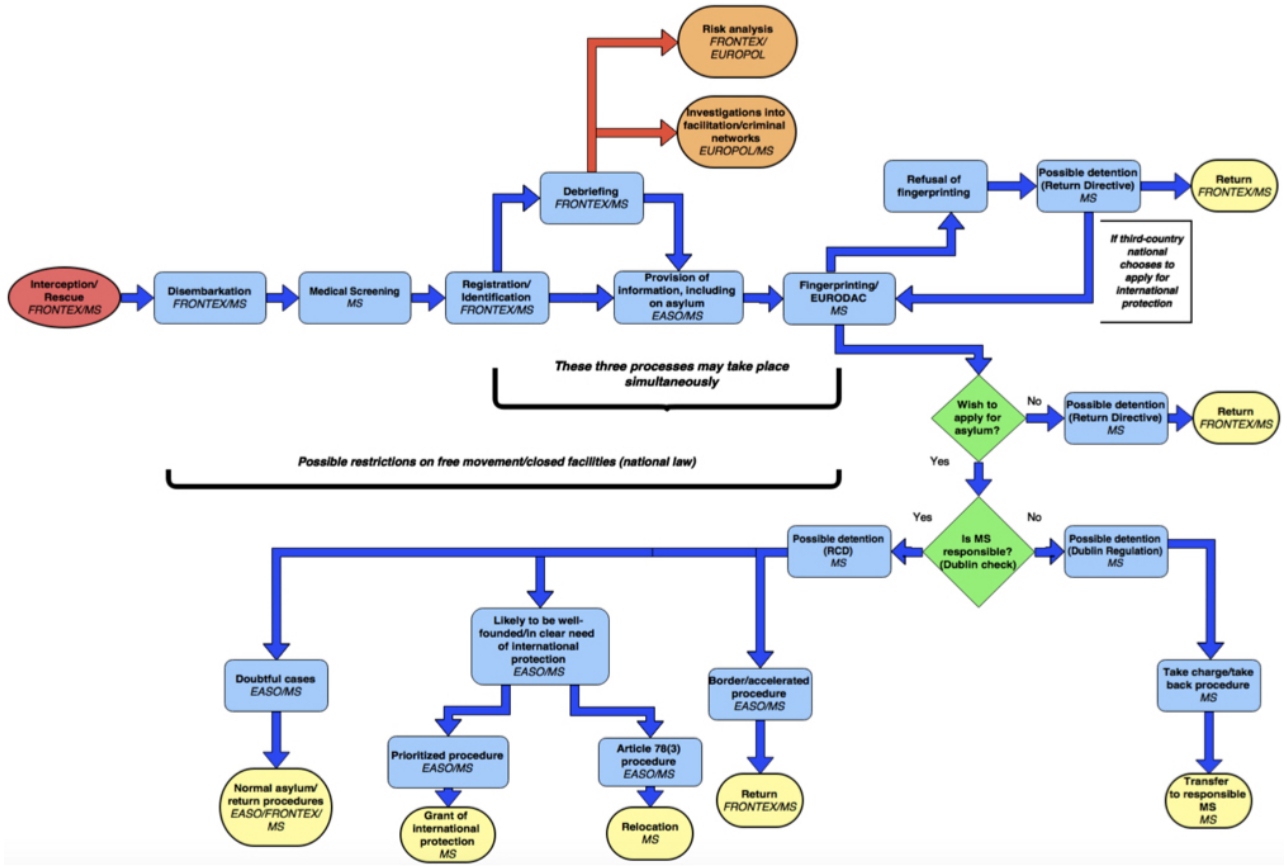

Figure 1. Hotspot approach. Source: EU Commission (2015, p. 12).

of a room fully closed to the outside." Panoramas do not make explicit how, by whom and for which purposes they were crafted. They either produce a distant position and simulate an "Archimedean point from which to represent the world" (Clifford, 1986, p. 22), or they enact a god-like view from no-where (Haraway, 1988). They turn a complex ecology into one simple scheme that represents the former "as a whole"—which is only possible by silencing many other voices and accounts (Geertz, 1973).

Panoramas also transform many phenomena, experiences and stories of people into numbers, populations, trends or other aggregates and translate them into matters of surveillance, control or regulation. In this sense, such maps refer to a practice strongly institutionalized by state actors and contribute to their stabilization and legitimization (Halder & Michel, 2019, p. 13). They are a crucial political technology for the creation of 'situational awareness,' the drawing of future scenarios, and the articulation of governance problems (Tazzioli, 2018), and facilitate the institutionalization of (trans)national spaces of border surveillance (Hess, 2010). In order to subvert and criticize such oversimplified big maps and to decompose the n-way nature of socio-technical assemblages (Star & Griesemer, 1989, p. 389), this article suggests an approach of counter-mapping that is based on 'thick analyses' and the creation of various 'small' maps, that aims to assemble multiple accounts of and voices in a situation of concern, and that is especially sensitive to silenced, invisibilized or othered voices and positions and to "what seems present but [remains] unarticulated" (Clarke, 2003, p. 561).

Especially for studying wide-spread and complex socio-technical assemblages of border control, this article suggests situating mapping into praxeographic research. As a variant of ethnography, praxeographic research focuses on situations but, by studying human and non-human entities in interaction and in a symmetrical way, it is more explicitly concerned with the socio-materiality and socio-technicality of a phenomenon. Meanings and identities are relevant regarding their effects on a particular practice as well as to the shaping of an entity or a social order (Sørensen & Schank, 2017, p. 412). Furthermore, praxeography not only traces multiple perspectives on a phenomenon but also studies the becoming of multiple phenomena realized by various enactments (Mol, 1999). An empirical inquiry thus makes multiple conditions of possibility visible, traces multiple configurations, agencies and options of an entity, and analyses how those multiple becomings are related to each other (Knecht, 2013, p. 95).

Mapping as a praxeographic methods device thus needs to be attentive not only to situatedness, complexity, and multi-sitedness, but also to heterogeneity, multiplicity, and translation. But how does one translate this into a research practice of and with mapping? Maybe Adele Clarke's cartographic approaches

are a promising starting point (Göde, 2015). Drawing on Strauss's social worlds and arena theory rooted in symbolic interactionist sociology and pragmatist philosophy, as well as on poststructuralist and postmodern approaches, Clarke has developed three types of mapping: (1) situational maps that empirically specify the elements of a situation—such as human and non-human actors, artefacts, objects, devices, doings, and sayings—as well as the relations among all the elements that "make each other up and together constitute the situation as a whole" (Clarke, 2019, p. 14); (2) social world maps that sketch out the social worlds coming together in a situation of interest, identify their properties, constraints, and resources, and make their intersections visible (Clarke, 2005, p. 110)—such maps lay out those collective actors and those lines of force that weigh on a situation, as well as those actors who are marginalized, silenced, or 'atomized,' without a collective; (3) positional maps that again carve out all the concerns articulated within a situation of concern, as well as those that have *not* been articulated but ignored, silenced or invisibilized.

Situational, social worlds and positional maps are very helpful approaches for opening up various situations of the trans-local and inter-organizational ordering of the hotspot. However, to be used as a praxeographic methods device that strictly focuses on practice, situatedness, heterogeneity, and multiplicity, they have to be modified in several ways: First, while Clarke seems to use situational maps for mapping a broader field of research, e.g., a broad institutional ecology of a hospital, a praxeography understands situations as confined events that (only) emerge when human and non-human entities actually meet and when meanings, knowledge, subjects, objects, and more are (re)enacted (Mathar, 2008, p. 31). In this sense, studying a wide-spread socio-technical assemblage praxeographically would mean conducting a small-range analysis and crafting maps on several situations in which entities meet.

Second, Mathar (2010, p. 157) criticizes how Clarke translates relationality into the mapping approaches. Clarke recommends putting all the entities on a piece of paper and then starting a relational analysis, in other words, to draw and qualify lines between the entities. This, however, risks producing immobile and essentialized entities, which stands against an actor-network theory-informed praxeography. Instead, research should shed light on the multiple becoming of an entity from situation to situation and be attentive to the processual shaping through time (Sørensen & Schank, 2017, p. 412). This does not only imply crafting many maps that make the different enactments of entities visible but also creating inversions of the very maps that question and subvert the mapping of entities and their relations to each other.

Third, Clarke's cartographic approaches remain inattentive to the circulation of entities. Studying a trans-local and inter-organizational socio-technical assemblage with various interconnected situations implies tracing the circulation of data, people and documents across various workplaces. Latour and others have criticized to think of the circulation of texts, figures, probes, goods, or other things from one site to another as a seamless and frictionless flow. Instead, when particular mediators have to move through time and space or when they bring their own agendas in, there are translation processes at work which alter the circulating entities in question. Callon (1984) has pointed to this with his subtle plays on the words 'traduction' and 'trahison' and argues that translation and betrayal are two sides of the same coin. In this sense, this article will develop trajectory maps that make visible the circulation of entities as well as reflect upon the transformations, tensions and frictions they go through.

Fourth, in contrast to Clarke's approaches that think of mapping as a mere research device, this article takes the political implications of mapping more strongly into account. In researching *on* and writing *about* the world, researchers interfere *with* the world they study (Law & Singleton, 2013, p. 488). Researchers in the realm of STS have experimented with different formats of interference that seek to bring alternative issues and solutions into the field of research which have not been taken into account before (Niewöhner, 2016). Here, intervention is not understood as a normative operation in the sense that the researcher prioritizes and selects some possibilities while silencing or ignoring others (Sørensen & Schank, 2017). Instead, by working out multiple enactments of subjects, objects and phenomena and the relations among them, an intervention would aim to complexify the normativity and power relations and point to alternative configurations. Similarly, and by drawing on Deleuze (1986), Pickles (2004) thinks mapping as a practice of enacting new possibilities and other realities that follows a logic of 'and, and, and.' Following such work, this article stresses to reflect upon the politics of mapping and to think about how mapping can be related to other social worlds and doings, forge new alliances, and create new collectives (Dalton & Mason-Deese, 2012).

With these modifications in mind, mapping may become a suitable praxeographic methods device that helps to navigate through difficult terrain, to order a complex landscape of a socio-technical assemblage, and to trace the trajectories from one situation to another. At the same time, it represents the field's messiness, contradictions and heterogeneities, and urges us to reflect upon the research process as well as its politics. In the following, the article will return to the Moria hotspot and sketch out several mapping approaches that, together, seek to disentangle the socio-technical assemblage of the Moria hotspot.

3. Mapping Bureaucratic Practices, Their Interrelations and Alterations: Situational Maps

Situational maps aim to empirically specify the elements of a situation—such as human and non-human actors,

artefacts, objects, devices, doings and sayings—as well as the relationalities among them (Clarke, 2019, p. 14). One of the great strengths of situational maps is that they direct the researcher to specific, located and situated accounts without referring to a context or a structure that would frame or explain situations. The researcher needs to find out which boundaries, contexts and conditions of a situation are created within the situation itself.

In the first year of my empirical inquiry, it was difficult to map the practices, and their actor-networks, of the Moria hotspot, because I was not allowed to access the camp. In the three weeks of my stay in Lesvos in November 2016, I managed to conduct fifteen interviews with Frontex officers, interpreters, personnel from UNHCR, Médicins du Monde (MdM), and the Hellenic Registration and Identification Service (RIS), as well with the commander of the camp. As I was not able to act as an ethnographer myself, I attempted to make my interlocutors the ethnographers of their own work. The creation of situational maps supported this process. I decided not only to craft maps by myself as part of the analysis of the interview afterwards, but also to use it as an interaction device: I created maps on large sheets of paper together with my interlocutors during the interview. While asking my interlocutors many questions—about their daily work, which materials and devices they use, how they use it, which data they gather and process, with whom they interact and in which way, which problems and challenges they face, or which concerns they have—I tried to translate what they were saying onto a map. Such maps focused on what kind of practices the interlocutor conducted, where the doings took place, which human and nonhuman actors were involved, and which actions followed on which actions.

Often, the interlocutors were astonished about the complex working arrangements taking shape on the piece of paper, which turned the boring little doings into an interesting subject of inquiry, as well as into a matter of expertise. The situational maps also reminded both the researcher and the interlocutor to stay focused on the situated practices and not to get lost in general evaluations about the hotspots. The white spots and isolated entities on the paper also directed the course of the interview. It also happened that the interlocutors showed some photos and working devices in order to produce a better picture of how things work. After the interviews, I crafted new maps based on an in-depth analysis of the interviews, on additional working materials, and on the preliminary field maps. In an iterative process, this mapping exercise placed the doings and interactions of my interlocutors at Moria hotspot on paper, as well as all the other human and non-human entities they were working with.

Step by step, a number of situations can be carved out that are constitutive for the socio-technical assemblage of Moria hotspot (Figure 2): the practice of screening with screeners, interpreters and document specialists (ALDOs), identification manuals and Google Maps (III),

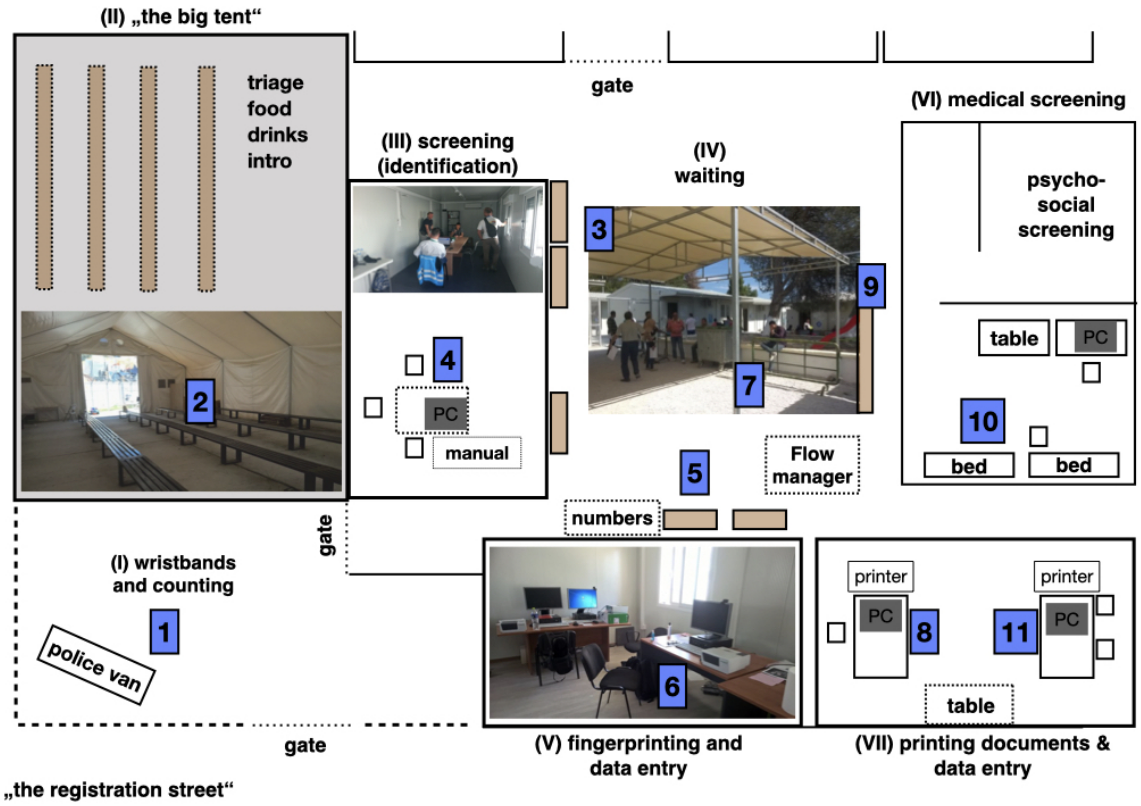

Figure 2. Situational map of the Registration and Identification Centre Moria.

the practice of fingerprinting with fingerprinters, fingerprinting machines, police databases, Eurodac, and disinfectants (V), or the practice of issuing documents with computers, printing machines, stamps and clerks from Hellenic administrations (VII) (see, for an in-depth analysis, Pollozek & Passoth, 2019). The situational maps also made visible the spatial organization of the Moria hotspot. The practices of screening, fingerprinting or issuing documents are contained through containers and separated from each other. They host highly stabilized and immobile entities, highly routinised practices, and a particular area of expertise. As we will see, each container accommodates a social world on its own. In contrast to those contained and immobile entities and practices, so-called "flow managers," the arrival and all kinds of documents move from one container to another.

While the interlocutors were able to provide differentiated and detailed descriptions about their working routines in their own container, they changed to a much more general and abstract register when I asked about the practices in the other containers. Then, regularly, the account of the "registration street" came into play (Pollozek & Passoth, 2019). It basically describes how the so-called "irregular migrant" turns into a legalized person by going through different steps and stations. It is a well-structured and systematized story about a well-ordered procedure, and it reminded me of a text from a standard-procedure protocol. In the beginning, I was disappointed by such generalized descriptions until I noticed that it is an important device for the interlocutors to situate themselves within the bigger and spatially dispersed assemblage of the hotspot. While the "registration street" interrelates the spatialised and contained practices, it separates them from each other at the same time. It provides the basic roles of each actor in "the whole process" and articulates a teleological process and a technocratic procedure that provides so-called "irregular migrants" with legal status.

With situational mapping, the assemblage of the Moria hotspot has been decomposed into several different practices and actor-networks that are organizationally and spatially modularized, contained, and separated from each other. However, situational maps tend to insinuate a built, stabile and atemporal order. As praxeographic research takes the on-going enactment of reality into account (Law, 2004, p. 56), the researcher has to be attentive to the processuality of becoming and to the events that produce alterations and variations (Mol, 2002, p. 14). In this regard, I asked the interlocutors about changes, variations and reconfigurations and crafted several situational maps throughout my later fieldwork at the Hellenic Coast Guard, the international coordination centre (ICC) and the EU regional task force coordination centre (EURTF) in Piraeus in January and May 2017, at the Frontex headquarters in Warsaw in May 2017, at the local coordination centre (LCC), the Hellenic coast guard and Hellenic police departments, as well as at the Moria hotspot on Lesvos in April 2018. The material I gathered included another thirty interviews, several working documents and forms, and notes about several visits at the Moria hotspot facility.

Such maps crafted over time point to the on-going reconstructions and changes at the Moria hotspot. The workplaces in the containers both increased and decreased over the years, the staff was exchanged every month, agencies, such as MdM, withdraw, and the command went from the Hellenic Police to the RIS. There were also on-going ad-hoc reconstructions of the camp. The "big tent" of the camp, for example, was regularly used as a temporary sleeping facility, when too many people arrived on Lesvos' shores at the same time (Figure 2). It also happened that the whole centre was overcrowded and the gate between the tent and the "registration street" was unlocked, or that the yard turned into a playground, sleeping area or work ground. Sometimes, there was a "flow manager" at the Moria hotspot, other times, the process was organized by assigning numbers, or the officers would stand in front of the containers and call out names, and sometimes none of that happened. It also happened that the working stations were set up in front of the containers.

One could describe such observations as constant overflows that exceed the socio-material framing of the situations of screening, fingerprinting or document issuing (Callon, 1998). But, as other work also suggests, this may also be seen as a mode of governance at the camp, which Papada, Papoutsi, Painter, and Vradis (2019) termed "pop-up governance," and which can be characterized by tinkering, workarounds and short-terms solutions including improvised bureaucratic practices that are full of errors, inconsistencies and inaccuracies (Rozakou, 2017, p. 38). Although this is beyond the scope of this article, it would be worth elaborating on such ad-hoc and all too often irregular bureaucratic practices as a mode of statecraft carried out on the shoulders of migrants who face unbearable conditions with long waiting times and inadequate health, food, housing and other services.

4. Studying Collectives, the Tensions between Them, and the Atomized Actors They Produce: Social World Maps

While crafting situational maps, I was confronted with many different agencies and administrations. In contrast to accounts of a well-oiled machinery or a smooth multi-actor collaboration found in policy documents, those collective actors, along with their representatives, agendas, resources, and funding and reporting schemes produced frictions and tensions in various ways.

Clarke aims to analyse the impact of collective actors on situations through social world maps and to carefully study their mutual interferences and entanglements. As outlined above, the registration and identification centre assembles several containers accommodating particular actor-networks and practices. Each container pro-

duces organizational boundaries and hosts experts with particular knowledge who face particular problems and use particular devices. While screening and fingerprinting is conducted by Frontex and the medical screening is done by MdM, issuing documents is carried out by Hellenic administrations, namely the RIS and the Hellenic Police. Each of the practices is supported and carried out by a particular collective actor that again has the resources to assemble a whole collective of human and non-human actors, such as personnel, team leaders, coordinators, shift-plans, working equipment, computers, databases, devices, formulas, etc. and to push forward particular agendas (Figure 3).

Such different, and quite autonomous, social worlds distributed among different containers clashed with the official, hierarchical scheme of the Moria hotspot with the Hellenic authorities in charge and prevented its implementation. For Frontex, for instance, identifying and registering all people systematically and monitoring the data upload onto the Eurodac database is of utmost importance. It is a crucial part of genuine *European* migration management based on the Schengen agreement. This requires a thorough identification, which takes time and clashed at times with the agenda of the Hellenic police. The latter wanted to speed up the identification and registration procedures to clear the overcrowded centre. In the end, Frontex officers refused to accelerate the practice of identification and registration. MdM again felt quite uncomfortable with its role as a state actor and issuing health and vulnerability records. It tried to subvert its position and staged itself as a critical actor by publishing weekly reports on the situation in the Moria hotspot. Tensions between the agencies were additionally fuelled by unequal working conditions (Rozakou, 2017). Frontex officers, for example, received both a higher salary than local Hellenic police officers and better compensation for overtime hours.

Social world maps also make explicit what Clarke (2005, p. 46) calls "atomized" and "implicated actors"—those who are not part of a social world, who have no collective behind them, no resources they can rely on, and no allies in whose name they can speak. Indeed, the arrivals running through the "registration street" are put in highly asymmetrical situations, in which they have only little to mobilize. However, from an angle of praxeography, such an analysis is too one-dimensional. This is because such a mapping shows neither in what ways atomized actors are plugged into social worlds differently nor how those atomized actors are enacted and made productive in multiple ways. In the case of the "registration street," a praxeographic analysis reveals that it is not a single actor but a 'human multiple' with several bodies, (data) identities, and subjectivities that are enacted. In the end, a legalized, migrant subject is crafted, but as a result of a cumulative process of enactments.

In the screening procedure, the arrival has to reveal biographical information about herself and convince the officers that such information is credible and that she

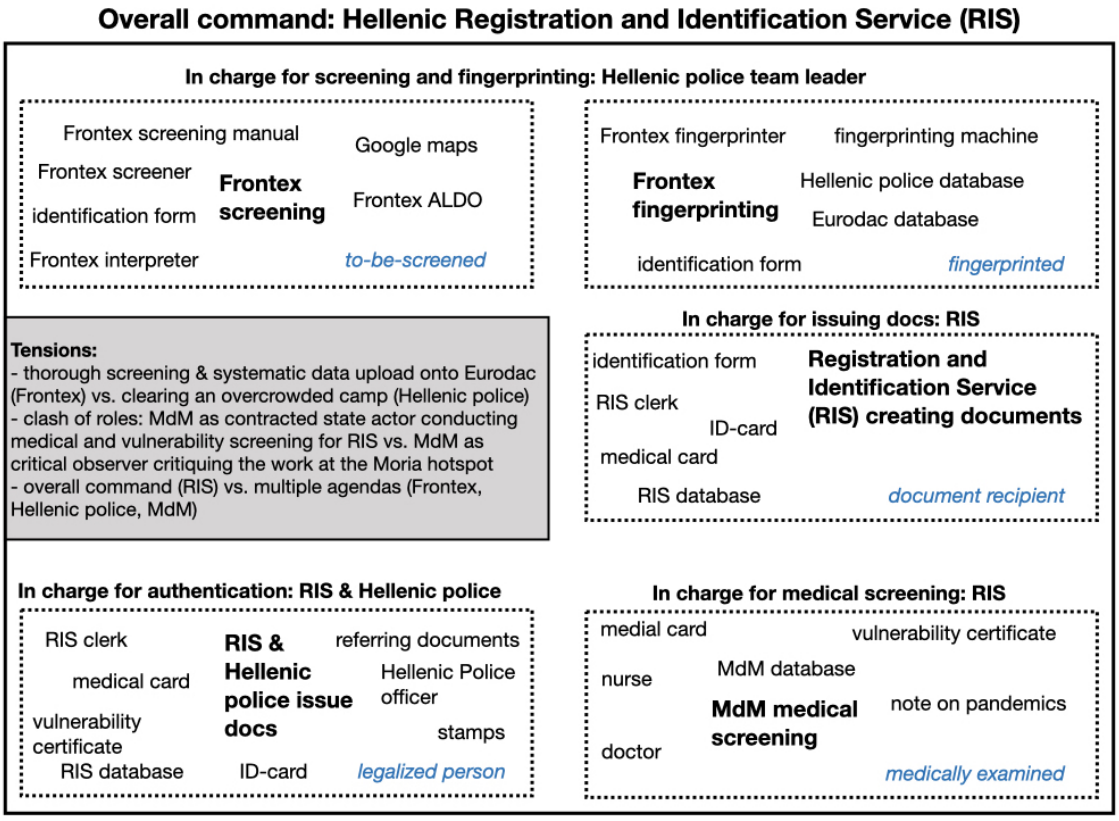

Figure 3. Social world map of the Registration and Identification Centre Moria.

acts truthfully. Her stories about herself are checked in terms of consistency, locations are checked via Google Maps, her dialect is assessed by the interpreters and her body is approached as a telling entity that may reveal lies. In the end, an identity is defined by the screeners and stabilized in the "identification form." In the fingerprinting container, the hands and fingers serve as an identification device that makes it possible to create a legible identity without the need for an intelligible subject (Kuster & Tsianos, 2012). Together with the classifications from the identification form, two more identities are created: one in the Hellenic police and another in the Eurodac database. In the medical screening, nurses and doctors approach the arrival in terms of mental and physical illness. Certificates, as well as the arrival's body, serve as a guarantor for the arrival's accounts. In the end, the doctors make a diagnosis and create two more identities, one about the health status of the arrival and another about whether she is vulnerable or not. Finally, RIS and Hellenic police produce a legal and stamped ID card that turns the arrival into a legalized entity with particular rights (social services, permit to stay on the island for a limited time) as well as many limitations.

Those multiple enactments of data identities will have their own social life in the different realms of EU and Hellenic administration (Pollozek & Passoth, 2019). Yet, the multiple enactments are also put together in a cumulative and sequenced process that creates a legal entity—a legalized migrant subject—with particular characteristics in the end. As far as I have witnessed, neither the production of multiple identities nor what they are for and which consequences they could have to the person in question is explained properly at the site. There is no spokesperson for the arrival in the very procedures that could guide and advise her. And there is no office in the centre for objections, demands or requests. In other words, the politics of identification and registration is based on multiple enactments and their concealment.

5. Tracing the Circulation of Forms and the Failures of Translation: Trajectory Maps

With the situational maps and the social world maps, I was able to work out the particularities of several practices and their socio-material arrangements being at work at the Moria RIC, as well as how they are shaped by collective actors and collectives. Yet, how collaboration across the different situations and containers is realized has remained underexposed thus far. As Latour (2005) and others from the realm of actor-network theory have pointed out, trajectories cannot be taken for granted. Instead, it has to be studied how actors are capable of pointing to other localities, actors and points of time in the past and the future in their present work and which actors are successfully able to do so.

When I focused on trajectories and tried to map them, the forms and documents especially attracted my attention (Figure 4). I decided to conduct further interviews and asked which documents are used, what classifications are defined, how they are filled out, and how they

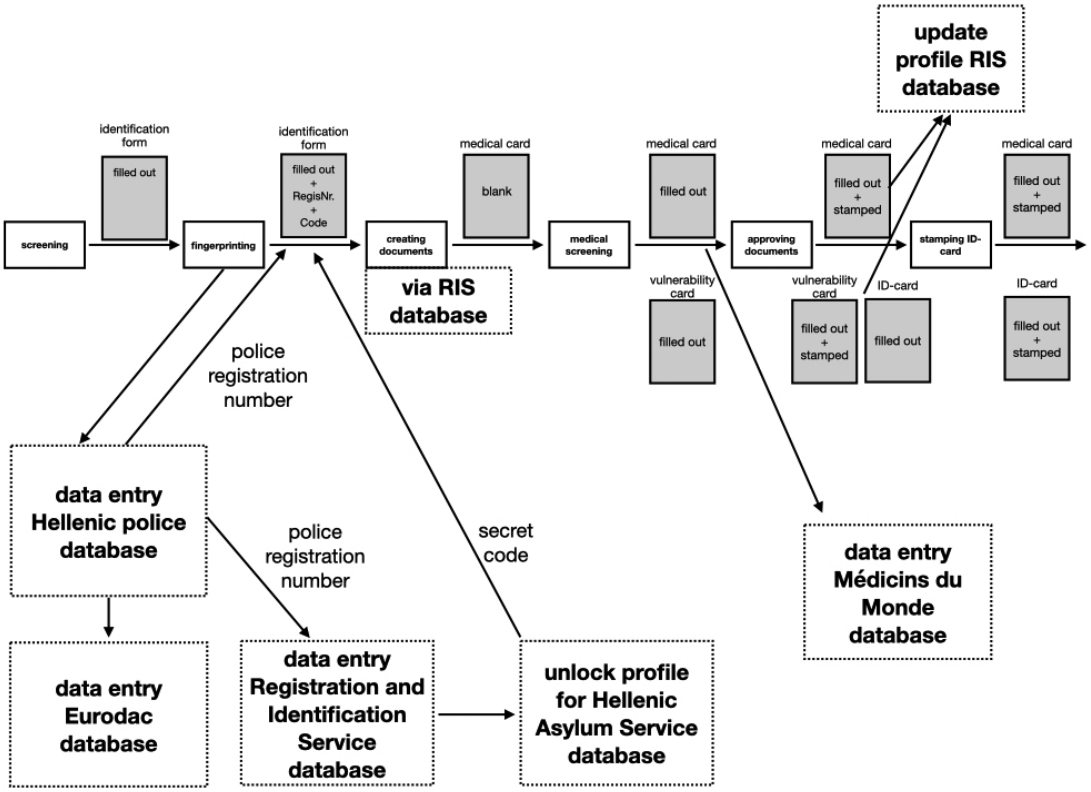

Figure 4. Trajectory map of the Registration and Identification Centre Moria.

are used for data entries. The forms circulate between the different teams and distribute data to several organizations and their databases. The forms also coordinate the actions between Frontex, Hellenic police, RIS and MdM by transforming complex processes of collaboration into a simplified chain (Schüttpelz, 2013). Like in a relay race, the forms go from one hand to the next and initiate a new routinised practice with each delivery: When the filled-out identification form from the screening is given to the fingerprinters, the latter can create a profile within the Hellenic Police database and start fingerprinting; when the Hellenic Police database identification number and a secret symbol has been added on the identification form, the RIS clerk can create another database profile for her agency. Through the relay with forms, several data identities and a legalized ID-entity are crafted in a cumulative process.

Although the trajectory map shows how forms are crucial for the distribution of data and the simplification and coordination of collaboration among several agencies, it does not reveal the complexities of paperwork within administrations. As Garfinkel points out, reports within an institutional ecology are not written for outsiders but for entitled actors who are capable of reading their indexical and cursory texture and relating those to particular working contexts (Garfinkel, 1969, p. 201). This is why the investigator has to focus on various user-contexts and carve out the multiple ways clerks work with reports. Taking this into account, I tried to work out what the forms do in each work setting. For instance, as a purification device (Latour, 1993), the identification form leaves out all the messiness as well as all the objections from the arrivals and creates a case out of predefined classifications that can be easily processed in a later step. The identification form, the restriction of the liberty card, and the medical card additionally authenticated the (new) identity of an arrival and address responsibility to a state agency after they have been signed and stamped. With this, they ascribe a stigma to its carrier (van der Ploeg, 1999). The forms are also used as a device of social sorting (Bowker & Star, 1999). At the end of the identification and registration process, the RIS creates referring documents that are sent to other Hellenic agencies via email. While identities with the item "Willingness of applying for Asylum: No" are sorted into the category "Non-Asylum Applicant" and forwarded to Hellenic police, identities with the item "Willingness of applying for Asylum: Yes" are sent to the Hellenic Asylum Service or those classified as vulnerable go to E.K.K.A. and after being archived by RIS, the forms become a warrantor of an identity and that an administrative procedure has taken place. This backup also entails the basic personal information of an arrival for potential future needs.

Observing the trajectory map that guided my inquiry also made me uncomfortable in another way. It somehow assumes that translation happens successfully and smoothly and leaves frictions and failure aside. Work in the realm of ANT has repeatedly pointed out that translation and betrayal are two sides of the same coin (Callon, 1984). With a focus on betrayal and failure, I noticed that the interplay of different forms and databases made the job of the fingerprinter a severe test. The database system of Hellenic Police is basically software used in many countries and also usually available in English. The adaption to the administration of Hellenic police included, among other things, that it has been translated into Greek and only Greek. However, it is not Hellenic police officers but Frontex officers who are entering the data into that database—and most of them are neither able to speak Greek nor to read Greek letters. The identification form they receive from the Frontex screeners again is usually filled out in English. In this way, Frontex fingerprinters are turned into bad translators who produce potentially error-prone data and other overflows.

To make translation more stable, Hellenic police has printed out additional sheets with the translations of the most relevant categories and items from the identification form as well as from the Hellenic database. The Frontex fingerprinters in turn tried to learn how to correctly enter data by memorizing the running order of clicking through the system. However, the Hellenic police database is not a silent and passive entity. If there is a wrong click, for instance, it returns an error message. It also cross-references the data entries with all the others saved in the database and creates a list with similar names and gives some additional alerts. This overstrained the Frontex officers, which is why they went to the Hellenic police officers' container and asked for help. As most of the times the database produces false alerts, both Frontex and Hellenic officers became reluctant to check on them and started to ignore them. This mode of ignorance, however, may produce all kinds of data-errors that could also have unforeseen consequences for the people those datasets are about.

6. Articulating Issues, Keeping Them Contestable and Bringing Them to Other Arenas: Issue Maps

In the previous sections, this article developed various maps of the socio-technical assemblage of the Moria hotspot that reject the reification of "big pictures" created by EU and EU state agencies loaded with visions of technocratic border management, a good collaboration between state agencies and lawful and a seamless bureaucratic procedure. The article suggested studying the interactions between human and non-human entities with situational maps, to work out the tensions of collaboration among different collectives as well as the enactment of a 'human multiple' by social world maps, and to trace the circulation of forms and data by trajectory maps. In this last section of the article, I will collect and generalize various issues and create what I call an issue map (Figure 5).

Clarke uses positional maps to disentangle contested or debated issues and to analyse the positions of the spokespersons taken in a particular public discourse.

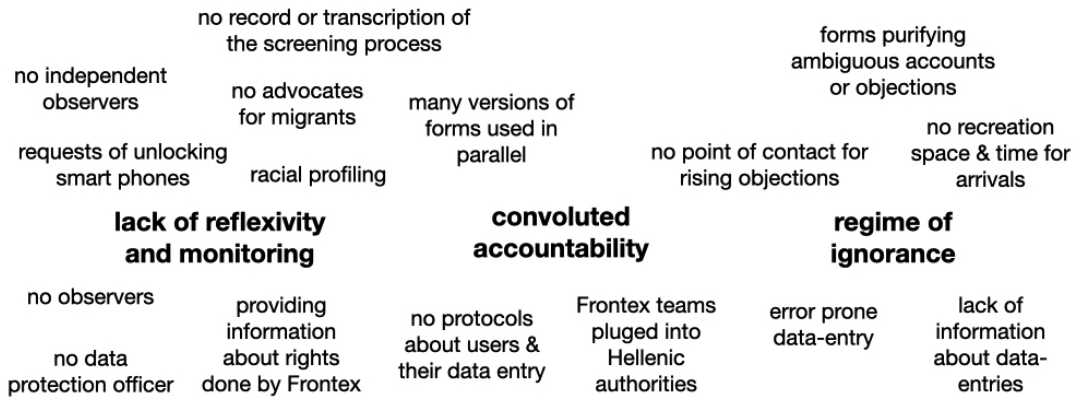

Figure 5. Issue map of the Registration and Identification Centre Moria.

Within institutional ecologies of border control, which is better characterised by secrecy, barriers and caution than by public debates and controversies, a discourse analysis is difficult to conduct. But Clarke also stresses to be sensitive to the issues which are somehow there but remain absent, as well as to look out for contradicting accounts and positions actors that are articulating (Clarke, 2005, p. 129). This might be a more suitable starting point for a critical approach of issue mapping that focuses on power relations and conditions of governing and produces silenced, invisibilized and othered voices and positions. In the following, I will articulate different issues by interrelating and generalizing topics that came up throughout the inquiry and the different mapping processes.

First, several orderings work hand in hand and enact a regime of ignorance: The socio-material arrangement does not provide any workplace for complaints and appeals; forms in use do not document how data has been gathered in the very processes of interrogation and screening but merely state a purified version about the case; advocates speaking in favour of migrants are absent; several data-entries are conducted without letting migrants know; or wrong data entries with unforeseen consequences are ignored. Furthermore, different orderings co-produce what I call convoluted accountability. Data entries into the Hellenic police database are conducted by Frontex personnel without leaving a trace; the practice of identification and registration is carried out by Frontex personnel although the Hellenic state authorities take responsibility; and different versions of formulas created by different staff circulate the Moria hotspot and create a mess. Moreover, there is a severe lack of reflexivity through the absence of monitoring devices or third parties. No independent party checks on human rights and legal issues, if the actions of the officers comply with legal requirements, or on data quality, protection, and privacy issues when data is gathered and exchanged between several databases.

Although I think that the generalization of those issues is valid, it makes me feel unease. While the former mapping strategies assembled accounts quite closely to my interlocutors, this move makes me critique them from a separated academic 'space of expertise.' Furthermore, such big labels risk being cut from the grounded accounts. So how to articulate critique that remains situated, that keep its relation to the accounts of the interlocutors alive, and that remains contestable not only to other colleagues from academia but also to other arenas?

Praxeographic work has pointed out that research is not only about tracing but also about making new associations by starting co-laborative forms of knowledge production. This, however, requires "mutual willingness and interest of the various parties to be inspired…by each other's practices" (Zuiderent-Jerak, 2010, p. 700)—something which appears to be almost impossible in an institutional ecology of migration and border control and especially in the Moria hotspot. Access is very limited and the situations that the researcher observes are highly asymmetrical. Restrictions of information are everywhere, confidentiality agreements have to be signed, and the employees are overworked to their limit and frightened by the lack of information that fuels the already scandalized and scandalous discourse about Moria. Regardless of the existence of a co-laborative project, the researcher would face the problem of having quite limited room for manoeuvre and running into the danger of getting instrumentalised and being accused of becoming a 'system designer.'

An alternative could be to reach out to other social worlds and arenas instead. Issues concerning the exchange and gathering of data, for instance, could be shared with data monitoring and data protection actors from civic society (e.g., algowatch), from state administrations (e.g., data protection officers in Germany) or the EU (e.g., the European Data Protection Supervisor). Bringing issues to other arenas would not only make them contestable but also rearticulate them due to different practices. The issues worked out by the researcher may be interesting to her and a particular research community but perhaps not so much for collectives being concerned with, and working on legal human rights, policy, data protection or other issues. In this sense,

critiquing could be an on-going and collaborative process of bringing new and more values than truth to the table and (re)position the researcher's work in new actor-networks.

Issues may also be re-appropriated regarding new agendas, e.g., to a political initiative on data protection rights. In this way, such forms of collaboration would not only invert the issue map, the critique of the researcher and her positioning, but also convert them into something else. Such work on producing new hybrid and contestable forums have their own complexities, struggles and pitfalls and raise issues of participation, positioning and negotiation that are beyond of this article (Farías, 2016). Still, it would be a way to "articulate possibilities of other worlds" (Law & Singleton, 2013, p. 500)—even in such rigid institutional ecologies as European migration and border control.

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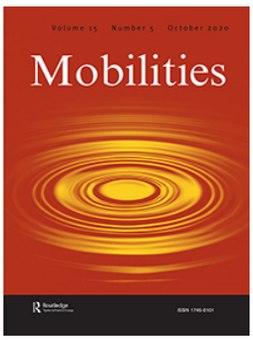
Paper 3

Pollozek, S. (2020). Turbulences of speeding up data circulation. Frontex and its crooked temporalities of ‘real-time’ border control. *Mobilities*, *15*(5), 677–693. https://doi.org/10.1080/17450101.2020.1801304

Summary and Contribution

In the last decade, various information systems have been created to process data in 'near to real-time' across agencies to 'improve situational awareness and to increase reaction capability' at the external borders of the European Union. While the policing of mobilities is increasingly discussed in terms of instantaneity, speed, and real-timeness, little has been said about the temporalities of data mobility. This paper focuses on the socio-technical architectures that are generative of data mobilities and analyzes the temporality of data circulation as the outcome of a contingent formation of various actors, sites, and materials. Based on an in-depth analysis of the Frontex information system Joint Operation Reporting Application (JORA), it works out several sources of turbulence that turn data mobility into a 'crooked' process of patching multiple temporalities and paces together. It will show how the implementation of JORA faces data frictions, issues of data quality, the synchronization of multiple orderings, and the clash of temporalities of border control practices on the ground. Thus, the infrastructuring of data circulation has effects on interorganizational forms of collaboration and knowledge production as well as on border work in the field of European migration and border control.

All steps of the paper including fieldwork, data collection, data preparation, analysis, conceptual work, and publishing have been conducted by Silvan Pollozek.



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Turbulences of speeding up data circulation. Frontex and its crooked temporalities of 'real-time' border control

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Turbulences of speeding up data circulation. Frontex and its crooked temporalities of 'real-time' border control

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ABSTRACT

In the last decade, various information systems have been created to process data in 'near to real-time' across agencies to 'improve situational awareness and to increase reaction capability' at the external borders of the European Union. While the policing of mobilities is increasingly discussed in terms of instantaneity, speed, and real-timeness, little has been said about the temporalities of data mobility. This paper focuses on the socio-technical architectures that are generative of data mobilities and analyses the temporality of data circulation as the outcome of a contingent formation of various actors, sites, and materials. Based on an indepth analysis of the Frontex information system Joint Operation Reporting Application (JORA), it works out several sources of turbulence that turn data mobility into a 'crooked' process of patching multiple temporalities and paces together. It will show how the implementation of JORA faces data frictions, issues of data quality, the synchronization of multiple orderings, and the clash of temporalities of border control practices on the ground. Thus, the infrastructuring of data circulation has effects on interorganizational forms of collaboration and knowledge production as well as on border work in the field of European migration and border control.

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'Real-time' border control and its temporalities of data circulation

In the last decade, the European Border and Coast Guard Agency, also known as Frontex, has heavily invested in information infrastructures – namely the Joint Operation Reporting Application (JORA) and the European Surveillance System (Eurosur) – that gather, distribute, and assess data in order to observe, monitor, and intervene in migratory mobilities in the Mediterranean Sea and beyond in near to real-time. Although these two systems do different things (Tazzioli 2018), they both process data about 'illegal' border crossings from the EU's external borders via national coordination centers to the Frontex headquarters. There, such data is enriched with other data about routes, smuggled goods, or 'facilitators', with pictures of boats and with satellite and drone images, and is put on interactive maps with multiple layers. The declared aim of both information infrastructures is to 'provide a constantly updated picture of the irregular migration situation at the external borders of the EU' (Frontex 2014, 35) in near to real-time in order to 'improve situational awareness and to increase reaction capability' (OJEU (Official Journal of the European Union) 2013, 14; Carrera and den Hertog 2015).

Current EU initiatives that drive the datafication and digitalization of the governance of mobilities make time a central issue. Through new technologies and the 'effective control of information' (Trauttmansdorff 2017, 116), instantaneity and speed appear to be the premise for the 'possibility of

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projecting controls as quickly as possible at any given point' (Jeandesboz 2011, 8). However, it cannot be taken for granted that data flows smoothly like a 'global movement of weightless bits at the speed of light' (Negroponte 1995, 12), making everything and everyone 'always-everywhere available' (Green 2002) through opaque algorithms and a gigantic mass of information (Berry 2011). Considering the complex and heterogeneous landscape of European border control, all the devices, information systems, sensors, platforms, and other technologies which have to be interlinked, and all the communication and information channels between authorities which have to be installed (EU COM 2013, 13), the project of a 'common monitoring and information sharing environment' (EC quoted in Jeandesboz 2008, 9) appears to be a complex and challenging endeavor loaded with overflows, frictions, and ongoing controversies (Sontowski 2018).

Quite some work has stressed the great impact of new technologies and data assemblages on the governance of migrant mobilities by studying reidentification arrangements (Haggerty and Ericson 2000; Adey 2012), the management and differential sorting of populations (Lyon 2002; Ruppert 2011), or the spatial and organizational proliferation of borders (Dijstelbloem and Broeders 2015). Yet, little research has been conducted on the *creating* of data flows across organizational and territorial boundaries, although this forms the basis of such data-intensive forms of mobility management (Tsianos and Kuster 2012; Pelizza 2020). Drawing on recent work from the realm of science and technology studies (STS), this paper problematizes the taken-for-grantedness of smooth, and real-time data processing, which all too often forms the basis of both enthusiastic and dystopian visions of real-time governance of migrant mobilities through technological means. Based on an ethnographical inquiry into the Frontex information infrastructure Joint Operation Reporting Application (JORA), it turns to the physical and organizational architectures that are generative of data mobilities (Lin et al. 2017) and decomposes real-timeness as an outcome of a 'crooked' process of patching multiple temporalities and paces together.

By studying the temporalities of data circulation, this paper contributes to recent work on the temporalities of the governance of mobilities. The discourse about situational pictures, situational awareness, and real-time data processing hints at a reconfiguration of the temporal logic of 'state mobility' (Mountz 2011). Through information systems like Eurosur and JORA, and the interconnection between control rooms and border guard units, the policing of migrant mobilities develops into something that Walters calls 'live governance' (Walters 2016). Instead of responding to and making sense of events after they have happened, live governance seeks to intervene in ongoing events while at the same time monitoring and evaluating them. Binding distant actors together in 'synthetic situations' (Knorr-Cetina 2009) thus makes border checks and surveillance one and the same and expands the state's room for manoeuvre (Bellanova and Duez 2016). With the possibility of monitoring migratory movements and border crossings far from the authorized passage points via various surveillance technologies *and* of coordinating the distributed activities of border guard units, technologies, and devices from distant control rooms, state mobility becomes more agile. The control of migratory movements is carried out in other spaces, such as at sea, in the mountains, or elsewhere (Walters 2016, 802).

The datafication and digitalization of the EU's frontiers also reconfigures the temporality of the production of state knowledge on migrant mobilities. In her study of JORA and Eurosur, Tazzioli points out that these information systems bind together the detection and interception of migrants 'on the spot' and the production of risk analysis in faraway coordination centers and headquarters. While 'border crossing incidents' are monitored in real-time, they are translated into compatible data that can be archived and merged together in order to produce future-oriented risk scenarios that open up spaces of intervention and make the state 'prepared' for potential migration threats and border stress (Tazzioli 2018, 273). Eurosur's and JORA's mapping functions are especially important in this regard, as they translate events at the margins of the EU into 'border crossing incidents' with a set of details and an assessment of their 'impact', that is, the estimated costs, resources, and technical difficulties involved in managing a certain migration phenomenon (Tazzioli 2016, 567). Hence, such mapping devices translate real-time monitoring into a spatial crafting of constantly updated border zones of intervention.

With regard to such border assemblages, which heavily rely on data infrastructures, Broeders and Dijstelbloem (2016) stress the importance of 'centers of calculation' and databases. While centers of calculation as intersections of communication and information channels store, combine, and distribute data and monitor and maintain the socio-technical set-up, databases merge and reassemble data from various sources as a 'great information equalizer' (Broeders and Dijstelbloem 2016, 244). However, those processes that are 'all about [accomplishing] interoperability, combination, sorting and synthesizing heterogeneous sources and types of data from a multiplicity of sources' (Tazzioli and Walters 2016, 453) produce data and infrastructural frictions.

Although often conceptualized as stable entities, data undergoes transformations when traveling from one site to another. Edwards (2010, 84) stresses in his seminal work on large-scale information infrastructures that 'data from many locations, consistent across both space and time [requires] a lengthy chain of operations, including observation, recording, collection, transmission, quality control, reconciliation, storage, cataloguing, and access'. As Pelizza (2016) makes clear, 'any of these translations – be it from one actor to another, or between two different materialities – constitutes an opportunity for data loss or corruption, that is, it offers an interface for data friction'. In her work on Dutch Kataster registers, she shows how the attempts to silence data frictions come with a price: they stretch the length of the circulation path and add steps of translation – which involves further data frictions (Pelizza 2016, 43).

Moreover, empirical inquiries in science and technology studies (STS) have brought data circulation down to earth by carving out the complex, laborious, and challenging work that holds a multilinear ensemble of human and non-human entities together (Bowker and Star 1999). Analyzing infrastructures as an ongoing accomplishment – infrastructuring – emphasizes all the activities of storing, tracking, displaying, and retrieving information across a wide array of devices, tools, interfaces, and systems. Susan Leigh Star (1999) points out that a functioning information infrastructure emerges when different places, with local practices, situations, and specific personnel, are translated into one another via translocal chains, standards, formats, or categories and when larger-scale technologies are implemented in such a way that they are used in a natural, ready-to-hand fashion by actors at multiple sites. Such an analytical lens opens up ostensibly stable and technological information systems and makes visible the mediations between multiple social worlds, actors, and interests, which are flanked with tensions, frictions, and all sorts of tinkering and work-arounds (Star and Griesemer 1989).

Following such work, this paper will show how the temporality of data circulation is the outcome of a contingent, procedural, and heterogeneous formation of various actors, sites, and materials (Weltevrede, Helmond, and Gerlitz 2014). Drawing on an ethnographical case study between 2016 and 2018 on the Frontex information system JORA, it will work out some sources of 'turbulence' (Cresswell and Martin 2012) that turn smooth and real-time data flows into a crooked process of infrastructuring which not only faces multiple temporalities and paces but also various frictions and tensions. This article will demonstrate how the distributed activities of data collection, processing, and usage across various border authorities produce issues of data frictions (II) and data quality (III). These enact a pace of data processing with several validation steps and make data processing slower and, to some extent, unreliable. Furthermore, it will work out how the implementation of an information system in the social worlds of migration and border control produces problems of synchronization. Collecting data for JORA while carrying out border operations makes it necessary to adapt the temporalities of data collection to the design of the information system as well as to the temporalities of a border operation. This enacts a pace of a bit-by-bit data upload (IV). And it will show how data mobility is not the only matter in the governance of migrant mobilities but has to be orchestrated with other concerns and other orderings of mobility. This produces a clash of temporalities on the ground with the consequence of further delays in data upload to JORA (V). In order to make such patchworks of various paces of data upload and various temporalities of data practices with all its variations and contingencies manageable, centers of calculation endeavor to monitor, support and streamline the arrangement – albeit, at least in the case of JORA, with limited success.

Yet, it finds a work-around by cutting validation short and making preliminary incident reports accessible to different Frontex personnel, especially to operational management (VI). The interplay of data frictions, issue of data quality, the adaption of a system to the 'real world', clashes of temporalities because of intersecting orderings of mobility, and work-arounds produce an ongoing de- and reordering of mobilities and thus not only shape the temporality of data circulation but also the governance of migrant mobility. In the last section, this article will sketch out how data infrastructures affect multiple sites and temporalities of governance, how they produce an EU-wide but heterogeneous data space through interconnection and replication, and how they produce their own ecologies in which they can operate and thus shape its users and their practices. In this sense, digital infrastructures are by no means non-political but produce new forms of power, and agency and reconfigure the field of the governance of migrant mobilities (VII).

The configuration of a centralized system and the displacement of data frictions

Since 2011, the creation and processing of 'Frontex incident reports' has been organized via the information system Joint Operation Reporting Application (JORA). It is set up to gather data on 'border crossing incidents' happening in the operational areas of Frontex border operations. In such operations, Frontex enlists border guards and assets from EU member state police and coast guard agencies. In Greece, for example, hundreds of guest officers, vessels, aircrafts, and helicopters from dozens of EU member state agencies have been deployed since 2013. In collaboration with Hellenic police and coast guard units, they carry out aerial, sea, and land patrol missions, detect boats crossing the Mediterranean Sea from Turkey to Greece in the Aegean Sea by thermo vision units, identify and fingerprint migrants at the registration and identification center in Moria, conduct investigations, and more.

By delivering reports from border guards not only from Greece but from all across the EU, collecting them at Frontex headquarters and converting them into 'border crossing incidents' which can be shown on an interactive map of Europe, Frontex seeks to 'maintain situational awareness' (Frontex 2014, 35). Such maps promise to provide insight to the 'real-time situation' at Europe's external borders (Frontex 2016), which means that an event is registered as it occurs with little or no communications latency. But how to integrate various authorities and border guard units with their particular reporting routines, languages, and data systems into a common set-up of data gathering and processing? In 2006, Frontex published a study stating that among the eight EU countries along the Mediterranean seaboard, responsibility for maritime issues was shared by 30 government ministries and 50 different authorities. Georgios Vourekas, head of the Sea Borders Sector, pointed out that 'there were no standard operating procedures regarding border control. The technologies used by the member states overlapped, or were incompatible. It was chaos – and it wasn't sustainable' (Frontex 2014, 55).

In contrast to Eurosur and other information systems which are meant to interlink different systems and make them interoperable, it was decided to design JORA as one single, centrally organized, and highly standardized information system. In this solution, only a few national police officers are selected and included in the reporting procedure by giving them a temporary account on a need-to-know basis. User roles are incident reporters, local and international coordination center incident verifiers, and Frontex Situation Center incident approvers. While the setup of one Frontex internal information system that includes only a few border guards minimizes interoperability problems and data friction, it comes at the price of making the process of data collection more complex.

As the few incident reporters cannot gather the data all by themselves, they rely on further border guards who collect data for them. To put it differently, minimizing the number of incident reporters requires bringing in additional reporters. This, however, turns the reporting of an incident into a distributed and hardly manageable practice with many more translation steps and other frictions occurring along the chain of data collection. As we will see below, this causes delays, waiting times,

and a fragmented pace of data entry. It also pushed the incident reporters into the position of a coordinator. And indeed, most of the incident reporters we talked to were based in coordination centers waiting for data collected elsewhere.

In addition to incompatible information systems, another issue of data friction caused trouble: How to achieve compatible datasets while taking into account changing personnel from different authorities across the EU with differing reporting styles and languages? As Asseco, one of the leading IT companies involved in the design of JORA, made clear on their website, one of the main tasks was to 'minimize mistakes caused by manual data collection and processing'. All incident reporters across Europe should gather the same information, and Frontex's answer to this was, again, standardization. The Frontex development section designed one template for all operations and user scenarios and defined one extensive item list of the incident.

The Frontex incident report template consists of almost sixty items that give quite a detailed picture of the so-called border crossing incident. The items are packed into three different sections: 'general information', 'specific information', and 'additional information'. While the first section gives details of which kind of incident it is, when and where it happened, if it was a search and rescue mission or which impact level it has, the second section asks for 'person's information'. What is the country and place of departure, how many victims of trafficking or even 'death cases' were found in the vessel? Which gender and presumed nationality does a person have? Is the person accompanied, and which (forged) documents does she have? The third data package entails details of the vessel. What kind of vessel is it, which flags or signs, how many engines, and what length is the vessel? Are the engines operational and is there a functioning GPS system on board, and which and how many goods have been smuggled? In comparison to shift reports, which also entail a very large free entry field for inserting a report about who was involved, when, where, how, and why, the incident report is almost completely standardized. The reporter clicks on predetermined entry fields in an online template, all of which require specific information.

The particular design of the template not only defines the datasets by a list of standardized and computer-readable classifications but also configures its user by 'setting constraints upon their likely future actions' (Woolgar 1991, 59). The template development section has also inscribed so called 'mandatory items' into the incident report template. These items are especially important to fill out. To make them visible to the reporters and to distinguish them from the other items, the template designers marked them with an asterisk. However, to fully ensure that such items are filled out, JORA developers added an interlock. This means that reports can only be finalized and sent to the next instance if all mandatory fields are filled out. When we compare the JORA incident attribute lists of the years 2013, 2014, 2015, and 2017, it is notable that more and more items are turned into mandatory ones. In just the 'general information' section, the number of mandatory items grew from nine in 2013 to fourteen in 2015 and to twenty-one in 2017, covering details regarding the operational area, date and place of detection and interception, and the incident impact level.

To put it in more analytical terms, in order to reduce data frictions and to make data compatible, the Frontex template developers prescribed an online template that strictly defines what to report. In doing so, they largely delegated a 'program of action' (Latour 1990) to a device that works successfully against a plurality of different habits and styles of creating shift reports by border guard officers from member state agencies all across the EU. The border guards' task, to write a report carefully and to ensure the report has been written in the correct way and with all necessary information, has been substituted, step by step, by the reporting device. First, items were prescribed into the template. Then they were classified as mandatory and marked with a sign in order to ask the reporters to gather at least this information. Finally, this was replaced with an interlock mechanism that was independent of the discretion of the border guards. In other words, the 'must-do' articulations of what-to-report have been translated into 'what-has-to-be-clicked' through the technological design. In this way, the reporters have been disciplined to gather precisely the information the template requires, and the rigid design of the reporting template ensures extensive, standardized, and compatible datasets.

With this, Frontex addressed the problem of incompatible information systems and data gathering practices through a centralized information system (JORA), a strict definition of user roles and access rights, as well as through the creation of an almost fully standardized reporting template with mandatory items. In the end, extensive and standardized data can automatically be uploaded to a centrally organized Frontex database and be used by various actors for different outputs. The other side of the coin is that this infrastructural setup made data collection a distributed and complex practice. As we will see below, this produces frictions between data collection and bordering practices and slows down the reporting process substantially.

Data quality and the creation of a validation Chain

Although Frontex seeks to 'maintain situational awareness' (Frontex 2014, 35) and to get a grasp on 'the real-time situation' at Europe's external borders (Frontex 2016), this is not the only agenda. The other is to enhance the possibility to gather and analyze data for different outputs and audiences. According to Tazzioli (2016), the core of 'the (nearly) real-time mapping rationale' of JORA lies in the quick reaction to migrants' movements 'by anticipating future migratory events through risk analyses' (576). And indeed, the data from the reports is used not only for a situational picture in the Frontex Situation Center but also for detailed risk analysis by the Frontex Risk Analysis Unit (RAU) and the Frontex Risk Analysis Network (FRAN), or for 'Tactical Focused Assessments' for the operational management of border operations.

Recording and recoding the past in order to create a statistically constructed future (Broeders and Dijstelbloem 2016) requires reliable and valid data and brings issues of data quality to the table. Pelizza (2016) contends that there are different notions of data quality. Data quality can for example mean producing a universal application of data across various information systems achieved by objectivization and standardization or defining 'authentic' or official data hosted by a state agency being appointed as a warrantor (Pelizza 2016, 44). In the case of JORA, we find two different approaches of data quality entangled with each other. The following section will work out how a reversible validation chain both 'hardens' data *and* produces a European-wide data pool with data shared across national police and EU databases. This, however, stands against the circulation of data in real-time.

Frontex made a great effort to institutionalize a Europe-wide validation process. JORA developers inscribed a validation procedure into the technological set-up of the information system. Instead of forwarding emails, the system automatically delivers the finalized reports to the validator responsible. After the incident reporter has finalized the report, she clicks on the 'send incident' button and the report is automatically sent to a validator at the local coordination center, then to a validator at the international coordination center, and finally to an incident approver at the Frontex Situation Center in Warsaw. Data thus becomes valid step by step through a number of attestations that have to be given by different personnel (Figure 1).

Crucial for the performance of valid data is the *reversibility* of the validation procedure. There are two options inscribed into the script: either to accept the report and to forward it or to reject it and send it one step back within the chain. The system not only enables going back and forth in the validation procedure but also re-initiating it from the very beginning. For example, an incident reporter told me that it happens that police investigators, also called 'debriefers', contact the incident reporter one day after the incident has been finalized and give new details concerning particular persons and their presumed and claimed nationality (Incident Reporter 10/04/2018). In such a case, the incident reporter can open up an already finalized report again and modify it, which means that the validation procedure starts from the beginning.

The validators also crosscheck the *content* of an incident report with other shift reports. The local and international coordination centers receive all shift reports from the border guard units involved in an operation. Each unit produces two reports: in the case of the sea, aerial, and thermo vision units, one report comes from the commanding officer and one from the Hellenic liaison officer; in the case

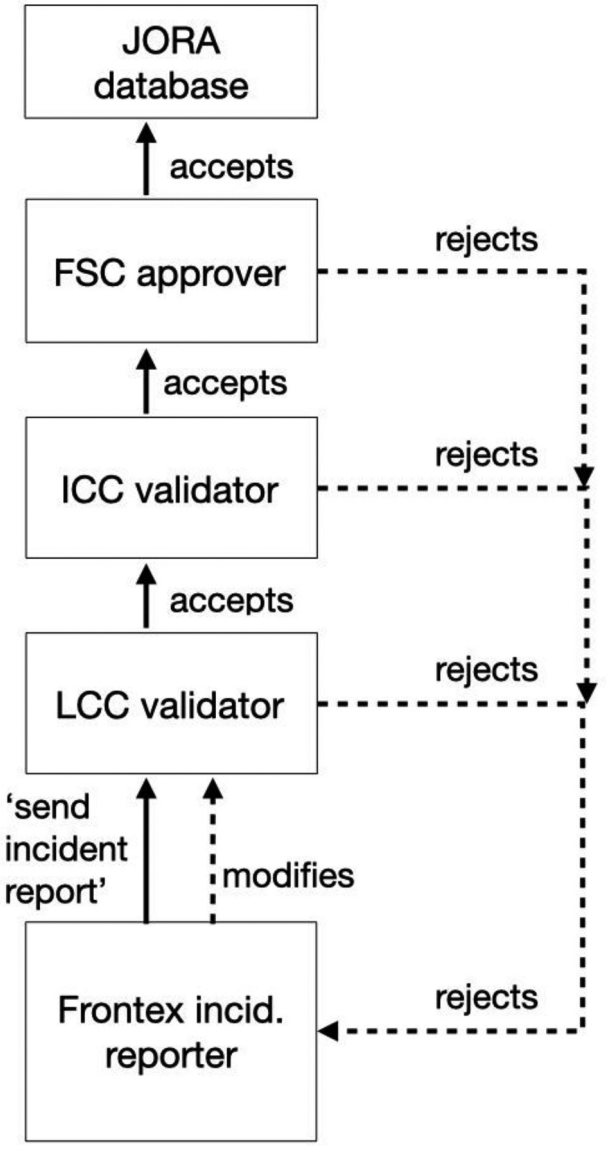

Figure 1. JORA validation chain 1.

of land patrol screeners and fingerprinters, one comes from the Frontex team leader and one from the Hellenic police team leader. Basically, data is accepted as valid when the two shift reports of a border guard unit state the same thing and when all the different shift reports correspond to each other and to the data entries in the JORA incident report. In this sense, JORA validation is grounded in a reversible 'chain of reference' (Latour 1999), which starts with the border guards in the field who then write their shift reports, whose data is then cross-checked and replicated in JORA, which is then again squared with the shift reports by different personnel. In cases of mismatches, the inquiry goes back step by step along the chain: if the incident reporter finds a mismatch, she comes back to the field officers; if the validators find a mismatch, they contact the incident reporter.

Yet, the reversible validation chain produces not only 'hardened' data but also a European-wide shared data pool. The work of the incident reporter basically is to crosscheck shift and mission

reports from border guard units coming from various national police and coast guard authorities and then – if data is the same – to replicate particular data sets in the Frontex incident reporting template. Also, the validators especially check if replication has been conducted properly. In other words, this replication procedure makes various EU and national databases host the same data – which is especially important for the exchange of data and the collaborative creation of statistics, for instance via the Frontex Risk Analysis Network (FRAN). In this sense, data quality is also achieved in the sense of a universal application of data. This implies not only the standardization of reporting templates and classification sets but also the active manual care work of Frontex officers who keep data in various reporting channels the same.

In this section, we have shown that risk analysis requires valid data and makes issues of data quality germane. By the implementation of a reversible chain, data quality is achieved in two different ways: Data is 'hardened' and data is kept the same across various EU and national databases. Both are crucial for the exchange of data and a collaborative production of risk analysis. Yet, the implementation of reversible validation steps thwarts a speedy data processing to Frontex headquarters, as reports may be sent back or validation may be re-initiated from the beginning.

Synchronizing multiple orderings of mobility: data collection for JORA while carrying out a border operation

In the following section, we will work out how the gathering and processing of data turns out to be a distributed, scattered, and hardly manageable practice that enacts a pace of a bit-by-bit data upload. The border guards, who collect the data, need to adapt the prescribed and mandatory items from JORA to their practices of reporting while carrying out a border operation. To put it in more analytical terms, the temporality of data collection is shaped by turbulent processes of description and interference: Akrich (1992) emphasizes to study the 'descriptions' of technologies, that is, the multiple, and often surprising ways of how 'real users' interact with technologies and produce overflows, frictions, work-arounds or tinkering. Moreover, when information systems are descripted, they interfere (Law 2004) with other orderings: In the case of JORA, the policing of migrants' movements with its own policies, routines, and urgencies on the one hand (border operation), and the control of data collection and processing with its constraints by technological design and its reporting practices on the other hand (border monitoring). As we will see, the description of JORA and the interference with other orderings produce problems of synchronization and ongoing activities of reordering the temporality of data collection as well as the pace of data-upload.

The incident reporting template requires more than sixty items and asks for details of the 'detection' of boats/migrants, the 'interception' of boats/migrants and 'smuggled goods', as well as details of the vessel and of the intercepted persons. The incident reporter can only finalize and forward the report after she has received all the 'mandatory' pieces of information regarding detection, interception, examination, and identification. As we see in Figure 2, these pieces of

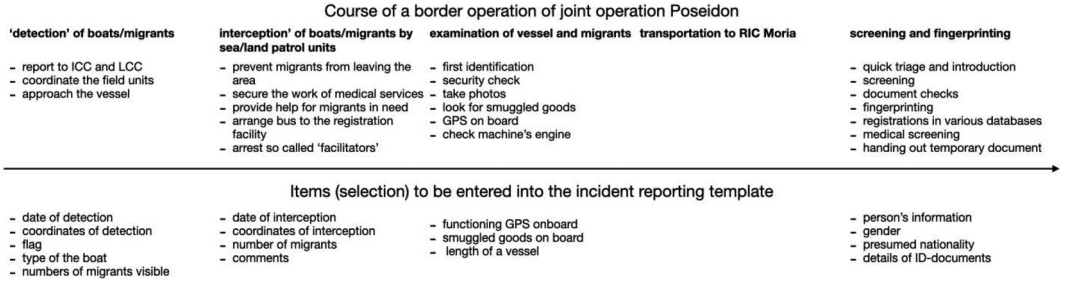

Figure 2. Synchronizing incident reporting.

information are scattered throughout the whole course of a border operation. In this sense, reporting has to adapt to the course of the border operation, which is the result of distributed activities and paces (Figure 2): Frontex thermo vision vehicle units, Frontex and Hellenic coast guard sea units, and Frontex and police aerial units watch out for incoming boats. When a boat with migrants is detected in the Aegean Sea, sea and land patrol units are informed. In case a sea patrol unit intercepts the boat, the migrants are brought to the port of Mytilini. After a first count and a preliminary screening, the migrants are transported to the registration and identification center in Moria. In case a land patrol unit intercepts the migrants somewhere on the island, they prevent them from leaving the area, secure the work of medical services, provide necessary help for migrants in need, and start with a quick screening. After that, they arrange bus transportation to Moria. There, the arrivals' identities are checked and authenticated, fingerprints are taken, basic medical checks are conducted, and official papers are handed out (Pollozek and Passoth 2019).

These activities take place partly in parallel, partly one after another. The operation can develop quite differently depending on the number of arrivals, their state of health, and if there are young, pregnant, or old people on board, and depending on the routes and landing of the vessels, the weather and the waves, the conditions of gravel roads, or depending on the time of the day. This is why joint border operations do not and cannot have a fixed schedule but rather develop step by step and in a contingent way. Consequently, the collection of data falls apart into a distributed, scattered, and hardly manageable practice.

This is also because most of the reporting practices and the data to be collected are not in accordance with the relevancies and urgencies of a border operation. Some data can be gathered right away during an operation. When a boat with migrants is detected in the Aegean Sea, the commanding officers of aerial and sea vessels radio the coordinates and some details of the boat, the number of migrants on board, and their condition to the international coordination center. After approval, the international coordination center delivers the information to the local coordination centers, where, at least on Lesvos, the incident reporter is based and inserts this information into JORA. On this occasion, the data is relevant to both JORA and the border operation. It is of utmost importance to inform the other border guard units immediately as well as the control rooms including the center for search and rescue operations and to coordinate the operation instantly. Other information however, for instance on the examination of vessels or on the intercepted persons, is mostly delivered after a mission in the form of a shift report. This is not only because details about a vessel, or about smuggled goods require some sort of examination, but also because they are used by police investigations which will be initiated later on. Consequently, there are other more pressing tasks.

The temporality of data collection is also hard to estimate because it is the border guards who determine its unfolding to a great extent. They assess the relevancies of a situation and negotiate between border and reporting practices. They decide how and when to do the reporting. We were told of border missions where only a handful of police and coast guard officers, together with NGOs, were thrown in messy situations with a lot of people in distress arriving all at once on Lesvos' shores. As the first priority is to provide basic help and to secure the site, there was neither time to report continually nor to check on all the items required for the report. The pace of reporting thus varies and reporting practices are often put aside. While the border guard units on site are the pacemakers of data collection, the incident reporters can only adapt to their paces – which often means simply waiting.

But it is also the nature of some of the datasets that they require a laborious and time-consuming practice of data collection. This also affects the temporality of reporting. 'Person's information', for example, asks for aggregated data from migrants (e.g. gender or presumed nationality) and for details about their identification documents. Such data can only be delivered after migrants have been brought to the registration and identification center and gone through the whole registration procedure one-by-one and after Frontex screeners and fingerprinters have processed, collected, and aggregated the cases, entered the results into a report, and finally sent the report to the incident

reporter. In this respect, 'person's information' requires the gathering, summing up, and grouping of data. It can only be delivered at the very end of screening and fingerprinting.

Taken together, the description of a rigid information system and the interference between data and border control practices produce several problems of synchronization. The interplay of a rigid information system, laborious processes of data collection, scattered and distributed practices of reporting and diverging relevancies between reporting and border operation turns data collection into a fragmented and crooked practice. This enacts a pace of a bit-by-bit data upload to JORA, which can take eight to twenty-four hours, or even longer.

Clashing temporalities on the ground: the struggle for the identification procedure at the registration and identification center in Moria

While the last section has outlined, how the temporality of data gathering and data processing has been shaped by the rigid design of JORA as well as by the temporalities of governing mobilities, this section will carve out how different temporalities clash on the ground. In the following, we will zoom in on the registration and identification center in Moria and show how Frontex screeners, fingerprinters, and their supervisors conflict with an acceleration of identification and fingerprinting. A closer look reveals that the practice of identification and fingerprinting intersects with three different orderings of mobilities. While the first is concerned about the regulation of circulation of migrants within the center and favors a speedy identification of migrants (Hellenic Police), the second seeks to achieve a systematic data upload to the Eurodac database and thus calls for a thorough practice of identification (EU Commission), and the third is concerned with a speedy but thorough (enough) data transfer from Moria to the incident reporter for a data upload to JORA (Frontex). This brings multiple, and conflicting enactments of identification into being.

After migrants have been arrested by the police and coast guard, they are brought to the registration and identification center in Moria. It is around ten kilometers away from Lesvos' capital Mytilini, where migrants have to go one by one through a screening and fingerprinting procedure. When valid travel or identification documents cannot be provided, a so-called screening takes place, in which a screener and an interpreter interrogate each migrant to find out their 'true' identity. Of particular importance for the further procedures is to establish a so-called 'presumed nationality', that is, from which state the migrant is presumably coming. If the migrant can show valid identification papers, the procedure can be over in ten minutes; if it comes to questioning, it can last more than an hour. Then, the generated data is uploaded into various databases. The creation of a valid identity for the migrant is the first step of any following procedures.

Screening and fingerprinting are highly political issues that both the EU Commission and Frontex pay particular attention to. Uploading the fingerprints into the Eurodac database is one crucial element of EU-wide migration management (EU COM (European Commission) 2013). An entry into that database not only states that a person has applied for asylum within the EU but also which member state is held responsible for this asylum case. However, Greece has refused to insert datasets systematically into Eurodac for years. In 2015, fingerprints of only 8% of the arriving migrants were taken, as the EU Commission complained (EU COM 2016). As a response, Frontex has explicitly pointed out in the Operational Plan for the Joint Operation Poseidon – the binding agreement between Frontex and the Hellenic state – that Greece should 'focus in particular on systematic identification, registration and fingerprinting' (Frontex 2016, 27). In 2016, Frontex equipped the registration and identification center in Moria with fingerprinting machines and additional personnel, provided containers, and deployed Frontex officers to take care of proper identification and fingerprinting.

The conflict of identification plays out on the ground as a clash of temporalities. In 2016, when a large number of migrants were stranded on Lesvos and hundreds of people had to be identified and fingerprinted at Moria every day, the Hellenic police team leader wanted the Frontex screeners to speed up the screening. The registration and identification center was overflowing with arriving

migrants and its capacities were too small to process this amount of daily incoming cases. Frontex screeners were expected just to fill out the identification forms as quickly as possible. However, Frontex screeners understood this order as an affront to their profession as policemen and to the agenda of Frontex and the EU Commission. Were they to become mere 'registrators' and not investigate if the statements were correct and if there were false documents circulating?

Frontex officers framed the attempt to speed up the screening procedure as an antagonism between a 'quick and dirty' and thus 'bad' policing style proposed by Hellenic police and a 'slow and thorough' and thus 'good' policing style conducted by Frontex. They were upset not only because a quicker screening would be deficient but also because it would subvert other border practices at the site. The screeners' task is also to check if the screened had been victims of trafficking crimes and to stay in contact with police investigators on site – the so called debriefers. In some cases, migrants could also become part of a police investigation as witnesses, which would have severe consequences for their lives and fates. Screeners should also inform migrants about the procedure and their fundamental rights and to watch out for vulnerable groups. From their point of view, the attempt of the Hellenic Police team leader would produce 'bad' police work and thwart the Frontex mandate.

The Frontex officers refused when the Greek Police team leader tried to bring them in line by placing a Hellenic Police officer in the screening container to monitor their performance. However, the Frontex officers' stand was backed up by the Frontex Operational Plan and by the Frontex Operational Coordinator (FOC), the head of Frontex operations on Lesvos. For the FOC it was important that screening is done thoroughly and that the migrants are treated politely and are informed about what is going on. As the guest officers' stay is fully taken care of by Frontex, who provide money, personnel, equipment, the workplace, housing, and a contact person on site for the daily administration, they had enough to mobilize and to refuse to support Hellenic police team leader's attempt at conducting a quick screening.

This story tells us that seemingly boring practices of collecting and processing data can become a highly political issue. It also tells us that border practices cannot be reconfigured at will since they are related to specific legal and normative rules and routines and are interlinked with other border practices and procedures. Furthermore, the competing concerns of the parties involved hint to different, and intersecting orderings of mobilities on the ground. While the Hellenic police team leader was concerned with the regulation of migrant mobilities within the registration and identification center Moria and tried to deal with its adverse conditions, Frontex personnel was concerned with the regulation of data mobility, that is with a systematical and careful data upload to Eurodac in order to fulfill the EU Commission's and Frontex' vision of a genuine European form of border management. The reordering of identification thus becomes a temporal matter (Pelizza 2020, 271). Speeding up practices of data gathering plays out as a clash of temporalities which also affects other sites and procedures of border control, not least JORA incident reporting.

The story finally shows us how the circulation of data through JORA intersects with other orderings of mobility, which requires the orchestration of differing priorities (Pelizza 2020, 271). In order to receive data on 'person's information' from the screeners at the registration and identification center, JORA incident reporting has to take conflicting temporalities of border control into account and to work them into its data processing infrastructure. This produces a dilemma, which is articulated in terms of time: When a large number of people are screened in a slower way, then the data upload to JORA may be delayed by hours – which is not favorable for the JORA reporting process. On the other hand, ensuring systematic 'data capture' is crucial both for Eurodac as a central component for a European data assemblage of reidentification (Dijstebloem and Broeders 2015) *and* for JORA as a crucial component for the monitoring of the external borders of the EU. In the end, JORA incident reporting has adapted to the temporalities of screening imposed by Frontex officers. It waits for the *report on screening, fingerprinting and document checks*, which is crafted at the end of a shift and after the whole cohort of migrants has been screened and fingerprinted.

Managing the crooked process of reporting: scheduling and fast-track data transfer

In this light, generating and processing incident reports to Frontex headquarters in 'almost real-time' after a border crossing event occurred seems to be most unlikely and the time frame of that process almost unpredictable. But how can one build 'situational monitoring' on such unreliable ground? In the following, we will outline how the Frontex Situation Center deals with those uncertainties by implementing schedules and work-arounds. Two data channels are installed: one that schedules finalized datasets and their path through the validation chain, and one that processes *preliminary* data in near to real-time to different actors.

Frontex implemented a schedule for the different steps of the reporting process (Figure 3). As soon as an incident has been saved in JORA, several time markers are activated. When an incident has been created, it has to be finalized and forwarded to the validator *the following day by 11:00* at the latest (Frontex 2016). In most cases, this is enough time for the patrol, screening, and fingerprinting units to end their task or shift, to create a report, and to deliver it to the incident reporter. The subsequent validation steps are then to be finalized within a few hours. The incident is supposed to be mapped onto the JORA dashboard by 17:00 at the latest.

The schedule seeks to produce a reasonably stable and expectable pace of data upload and data transfer, while at the same time framing the temporalities of data collection and validation. The schedule takes the uncertainties and idiosyncrasies of the work of the patrol, screening, and fingerprinting units into account. The deadline is loose enough and allows the border guards to finish their operations and shifts and to create a report afterwards. But it is also strict enough to urge the officers to deliver the information right away after their operation or shift to the incident reporter. This way, the schedule can be expected to be met and deviations can be recognized and addressed. In order to make data upload and data transfer on time more likely, Frontex equipped the schedule with a monitoring device. When a report or a validation has been finalized, it is recorded by the information system and displayed at the Frontex situation center. In case of delays, service managers intervene into the practices of reporting by consulting and assisting the officers responsible (Frontex 2016). Yet, when validators refuse an incident report and it is sent back to the previous instance, scheduling restarts. In this sense, data quality is prioritized over speed.

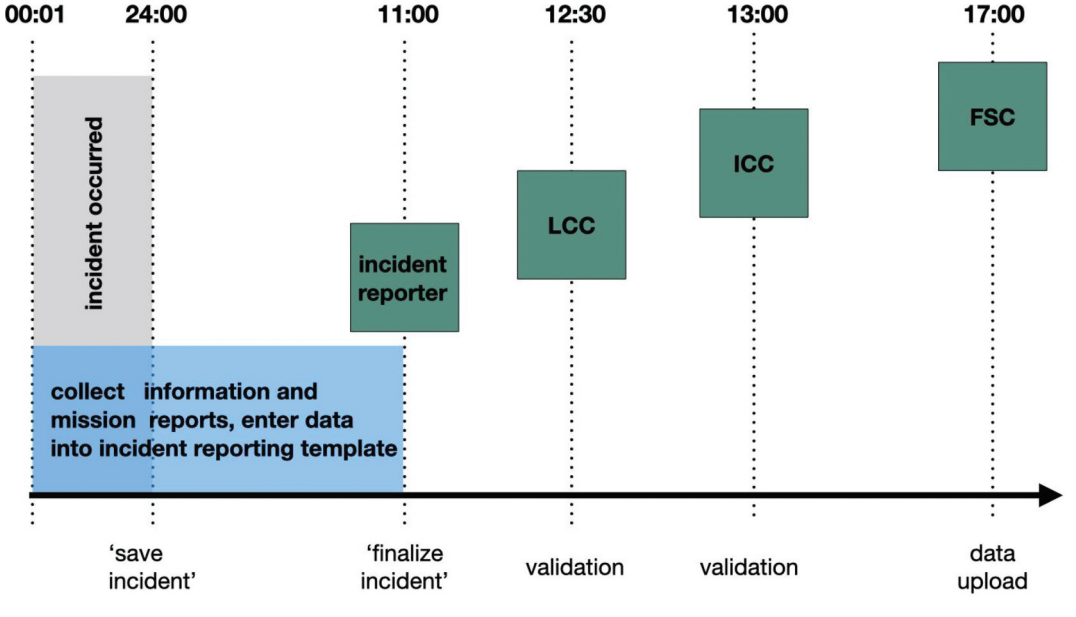

Figure 3. Timeline JORA reporting and validation.

In case an incident reporter does not receive the information on time or validators do not accept the report, the report is forwarded tardy rather than on time but incomplete.

Nevertheless, Frontex achieved data processing in near to real-time using a work around. It created an additional channel that distributes *preliminary datasets for operational management*. There are three directives inscribed into the online input mask of the JORA report: 'Send incident', 'save' and 'close'. When a report is finalized, the reporter clicks on 'send incident'. But when the reporter has created a preliminary version of a report, she clicks on 'save'. As soon as a reporter does so, this preliminary version becomes visible to all JORA users (with the proper access rights) from the coordination centers, the Frontex situation center, the Frontex risk analysis unit, and operational management. Although this preliminary data is not used for the creation of incidents on the interactive Europe map or for risk analysis, it is taken as a first assessment for operational management.

Real-time data processing is also achieved through the deployment of the incident reporters at the local coordination centers (LCC). As we observed on Lesvos, the incident reporter also worked as the so-called LCC coordinator and as such he was in steady contact with the field units and other control rooms. While coordinating the operation, he created an incident report, saved it as preliminary version and then entered data bit by bit each time when new information flew in. In this way, Frontex personnel is updated on ongoing border crossing incidents via preliminary reports quasi-real-time.

This technological work-around allows the circumvention of the regular reporting procedure. In creating two channels, datasets on border crossing incidents can be processed in quasi-real-time in the form of preliminary versions and used for operational management, while validated datasets are forwarded more slowly but then usable for risk analysis and other forms of knowledge production.

Conclusion and discussion

The datafication of mobility and migration management makes time a central issue of governing mobilities. Through new technologies and infrastructures, data is gathered, distributed, and assessed across authorities in real-time and multiple border sites are interconnected with control rooms, coordination centers, and headquarters. This mode of governing, which Walters (2016) describes as 'life governance', aims at situational awareness, situational pictures, instantaneity, and speed. While time is clearly an issue in the governance of movement, it is equally so in terms of the mobility of the data that enables that governance. However, although the control of migrant mobilities heavily depends on the temporality of data circulation, the latter as a critical research topic has been widely ignored and all too often real-timeness has been taken for granted.

Paraphrasing Lin et al. (2017), we problematized and decomposed the idealization of smooth real-time data flows by empirically investigating the physical and organizational architectures that are generative of data mobilities. Based on an in-depth analysis of the Frontex information system Joint Operation Reporting Application (JORA), we studied how various actors, practices, and materials are mediated into a chain of data processing. With reference to work from STS, we worked out four sources of turbulence that turn a smooth data flow into a crooked process which patches multiple temporalities and paces together. Although these sources of turbulence are related to a particular case, we think that they are characteristic of data mobilities and can be applied to other cases, too. In one way or another, data mobilities are affected by data frictions, data quality issues, the synchronization of multiple social worlds and their temporalities, as well as by clashing temporalities on the ground as a consequence of intersecting orderings of mobility. The infrastructuring of data mobilities thus can be described as an ongoing process of ordering, deordering, and reordering, which not only shapes the temporality of data circulation but also other forms of governance of mobility.

In the case of JORA, a data infrastructure has been designed to deliver data from so-called border crossing incidents to the Frontex Situation Center in Warsaw in near to real-time in order to achieve 'situational monitoring' of Europe's external borders. Speed was one of the key concerns of this

information system. However, each data infrastructure has to deal with data friction. In the case of JORA, various authorities and differing reporting routines, languages, and data systems needed to be integrated into a common data infrastructure. Frontex chose to create one centralized information system (JORA), limited its users, and strictly defined the data to be gathered through templates and item batteries. Although this extensive prescription of users and data entry minimized data frictions, it made the few incident reporters dependent on many additional reporters and thus made reporting into a distributed and hardly manageable activity. This produced many more translation steps as well as new frictions along the chain of data collection.

Moreover, as data infrastructures usually process data for many different actors, purposes, and outputs, they face issues of data quality. This also holds true for JORA. In order to generate valid data, a sequential and reversible validation chain was implemented. Data quality was achieved in a twofold sense: through the hardening of data by cross-checking reports and through the replication of data across the authorities that produce a Europe-wide data pool. The design of a reversible validation chain made the temporality of data processing variable and unreliable.

Implementing a data infrastructure in multiple social worlds means adapting an information system to multiple sites as well as mediating and synchronizing multiple relevancies, practices, and their temporalities. In the case of JORA, we could show how two temporalities of mobility needed to be aligned – that is, the policing of migrants' movements with its own policies, routines, and urgencies and the control of data gathering and processing with its reporting practices. The interplay of mandatory items to collect, laborious processes of data collection, field units as pacemakers, and data practices not being in accordance with the relevancies of the course of a border operation produced problems of synchronization and turned data upload into a fragmented pace of a bit-by-bit processing. This extends reporting by hours and adds waiting time.

Furthermore, intersecting orderings of mobility cause struggles between different parties, their agendas, and practices and produce clashes of temporalities on the ground. In our case, three different orderings of mobility intersected with the practice of screening at the registration and identification center in Moria. While Hellenic police made the overflowing and the adverse conditions of the center the most pressing issue and thus asked for a quick identification procedure, Frontex personnel were primarily concerned with a systematic and careful gathering of data for the Eurodac system in order to fulfill EU Commission's and Frontex' vision of a functioning EU-wide data regime. Incident reporting again required a speedy but extensive gathering of data for the creation of situational pictures of the EU's external borders. Carrying out screening more quickly would not only have affected other procedures of border control on site but also provoked stubborn resistance from Frontex officers who saw 'good' police work being endangered.

As a consequence, the real-time circulation of data has been undermined and the resulting patchwork of temporalities and paces slowed down data transfer substantially. In order to tame this complex ordering process, Frontex implemented scheduling and monitoring devices into JORA. As soon as an incident has been created, time markers and deadlines are set, which can be monitored by Frontex service. The schedule can be understood as a compromise between the temporal contingencies of the reporting practices and a reasonably stable pace of data transfer with ultimate deadline. With this, Frontex is far from providing a constantly updated picture near real-time. Nevertheless, Frontex has achieved real-time monitoring of border crossing events through a work-around that makes it possible to process preliminary versions of an incident report to a variety of Frontex users for purposes of operational management.

Having said this, we can specify how the design and implementation of a data infrastructure affects not only the circulation of data but also the contemporary forms of the governance of migrant mobilities. First of all, data infrastructures like JORA set up several channels and temporalities of data circulation and produce various connection possibilities. Preliminary data is forwarded to operational management while validated data produces situational pictures on several screens some hours later, which is then archived in the database for future usage. The standardization of data has made it possible to merge data since 2011 and to produce different outputs by different actors which

draw on past events and sketch out possible futures to be governed. Tazzioli (2018) speaks of 'coeval temporalities – that is to say, different temporalities (past, present and future oriented) that are simultaneously at play in the crafting of migration risk analyses and preemptive spaces of governmentality' (273).

The case study also gives some details of the geographies of data circulation. Instead of a single supra-national data space, through which data can circulate without losing its shape, various data spaces are interconnected. The case study showed how the information channels of national police authorities and of Frontex are interlinked by JORA incident reporters who replicate data from one channel to another. In this sense, data circulation is achieved by specific 'switching points' that interconnect a variety of administrational network-spaces (Pollozek and Passoth 2020, forthcoming). Although this is beyond this paper, this hints to a mode of an interorganizational, and transnational technobureaucratic governance that is based on the interconnection of and the harmonization of data across national and EU administrations (Pelizza 2020, 279). It is exactly this infrastructural work of mediation and interlinking that strengthens Frontex' position in the concert of European security actors.

Furthermore, data infrastructures like JORA produce their own ecologies in which they can operate and thus have effects on the practices of border control. On the one hand, JORA disciplines its users by technological means. The definition of classification sets and mandatory items, the creation of deadlines and the implementation of monitoring devices that observe the officers' performance ensure a consistent data handling independent from the organizational background of the user. This is a crucial element for the development of a 'common information sharing environment'. It also stabilizes routines and styles of reporting that build on computer readable datasets and data handling. On the other hand, JORA fosters interorganizational collaboration. It demands a lively exchange between control rooms, field units, EU and national agencies and interconnects border guards on the line with those who work remotely. It also brings issues of an 'intelligence-led policing and a risk-based approach' (Bigo 2014, 215) into all sorts of border work. Field units are turned into data processors and data issues prevail against other border control issues. In this way, while realizing data circulation in one way or another, data infrastructures reconfigure border practices, forms of collaboration, and positions within the European field of security through the back door.

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Paper 4

Pollozek, S., & Passoth, J.-H. (2020). Zirkulation, infrastrukturelle Bahnung, Schaltstellen. Europäische Grenzkontrolloperationen und die Koordination interorganisationaler Berichtsflüsse. *Zeitschrift für Medienwissenschaft*, *12*(23–2), 64–73. https://doi.org/10.14361/zfmw-2020-120208

Summary and Contribution

This paper draws on science and technology studies and media studies and analyzes the reporting system of the Frontex joint operation Poseidon. It works out modes of coordination that allow reports to circulate interorganizationally. While practices of templatization, standardization, and replication render reports stabile, mobile, and recombinable, the template in form of a list with item batteries makes datasets adaptable to multiple contexts of usage. As reports also circulate along the boundaries and hierarchies of single authorities, switching points are also required in order to punctually transfer data from one administrative channel to another. In this way, multiple forms of infrastructuring enact a multi-layered network-space of circulation that encompasses multiple authorities.

The paper is based on extensive fieldwork Silvan Pollozek has conducted. This includes visiting and interviewing staff being concerned with the crafting, processing, validation and distribution of reports, which are the basis for an interorganizational circulation of data. Silvan has approached team leaders of border guard units, liaison officers from the Hellenic coast guard authority, local coordination coordinators based on Lesvos, international coordinators based on Piraeus, coordinators based at the local and national headquarters of Hellenic police and coast guard, Frontex incident reporters, Frontex incident validators, Frontex service managers and Frontex administrators at Frontex headquarters in Warsaw, and officials from EU member state authorities. Furthermore, Silvan gathered manuals and other documents that outline and explain practices and processes of reporting, collected reporting templates and classification systems and traced the trajectories of reporting.

Furthermore, Silvan transcribed, coded and interpreted all the interviews, mapped out the workplaces he attended, conducted a detailed analysis of the classification systems, worked out the trajectories of data circulation, and studied the devices, practices and processes that make the interorganizational exchange of data possible.

In order to conduct an in-depth analysis of the mediators at work, Silvan additionally collected and worked through several corpus of literature including actor-network theory, pragmatist information infrastructure studies, and media studies. Finally, Silvan developed an argument that complexifies

Silvan Pollozek; Jan-Hendrik Passoth

Zirkulation, infrastrukturelle Bahnung, Schaltstellen. Europäische Grenzkontrolloperationen und die Koordination interorganisationaler Berichtsflüsse

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JAN-HENDRIK PASSOTH / SILVAN POLLOZEK

ZIRKULATION, INFRASTRUKTURELLE BAHNUNG, SCHALTSTELLEN

Europäische Grenzkontrolloperationen und die Koordination interorganisationaler Berichtsflüsse

Vor der Küste von Lesbos kommt es zu einem sogenannten *border crossing incident*: Ein Boot mit Migrant_innen wird von einer Frontex *thermo-vision unit* entdeckt. Koordinationszentren werden angefunkt, Schiffen werden Koordinaten durchgegeben, die Polizei wird informiert, *land patrol units* und ein Bus für die Abholung machen sich auf den Weg. Die Migrant_innen werden nach Moria – dem Hotspot auf Lesbos – gebracht und dort identifiziert und registriert. Nach dem Einsatz verfassen Teamleiter_innen, Verbindungsbeamt_innen, Kapitän_innen und Koordinator_innen Schicht-, Lage- und Intelligence-Berichte, Polizeibeamt_innen füllen Abrechnungsformulare aus, im Frontex *situation center* in Warschau wird der Vorfall verzeichnet, die Frontex *risk analysis unit* erstellt Risikoanalysen, und im internationalen Koordinationszentrum in Piräus legen die beteiligten Behörden Schichtpläne und die Einsatzgebiete für den nächsten Tag fest.

All diese Akteur_innen und Umstände sind durch Berichte aufeinander bezogen, die an verschiedenen Orten geschrieben, vervielfältigt, angereichert und überarbeitet worden sind. Es ist die Zirkulation von Berichten, durch die Frontex und Polizeibehörden Migrationsrouten, Grenzübertritte und Populationen konstruieren, kriminalisieren und als Objekte von Migrations- und Grenzkontrolle in Stellung bringen. Doch wie sind jene Berichte beschaffen und welche Transformationen durchlaufen sie, um zwischen all diesen Behörden zirkulieren zu können und in multiple Kontexte einbezogen zu werden? Welche infrastrukturellen Bahnungen für die Zirkulation von Berichten werden eingerichtet und auf welche Weise erfolgt dies, wenn bestehende Zuständigkeiten, aber auch organisationsspezifische Verordnungen gewahrt bleiben müssen?

Diese Fragen stehen im Zentrum dieses Beitrags. Ausgehend von einer zwischen 2016 und 2018 durchgeführten Ethnografie über die Frontex *joint operation* «Poseidon» in Griechenland untersuchen wir infrastrukturelle Bahnen, die Berichte zwischen Frontex und Polizeibehörden zum Zirkulieren bringen,

auf deren Grundlage Objekte des Regierens produziert sowie transnationale und interorganisationale Grenzkontrolloperationen organisiert werden. Auch wenn unsere Analyse auf die kritische Beleuchtung der infrastrukturellen Dimensionen des europäischen Migrations- und Grenzregimes abzielt, so konzentriert sich dieser Beitrag in aller Kürze auf die Instanzen, die Berichte generieren, bearbeiten und distribuieren. Zunächst (I) werden wir auf die Denkfigur der *immutable mobiles* zurückgreifen und zeigen, wie mittels Templatisierung, Standardisierung und Replizierung Berichte stabil, mobil und rekombinierbar gemacht werden und imstande sind, zwischen Orten und Akteuren zu reisen und Wissen arbeitsteilig und über Orte verteilt zu produzieren.[1] Die Berichte sind dabei (II) weniger als Zeugnisse eines gemeinsamen Sinnzusammenhangs denn als listenförmige Aneinanderreihung diskreter Elemente zu verstehen, die extrahiert oder zusammengesetzt werden können. Auf diese Weise können sie jeweils unterschiedlich in verschiedene Arbeitszusammenhänge eingebunden werden und als *boundary objects* Praktiken aneinanderkoppeln.[2] Behördliches Berichtswesen ist aber auch Teil der Organisation. Indem Befehls- und Berichtsketten aufgesetzt werden, werden Zuständigkeiten adressiert, Hierarchien hergestellt und organisationale Grenzen etabliert. Das macht schließlich (III) Übersetzungsinstanzen zwischen Behörden erforderlich, die wir – über die beiden Konzepte der *immutable mobiles* und der *boundary objects* hinausgehend – als Schaltstellen bezeichnen, weil sie Skripte entlang behördlicher Grenzen organisieren und zugleich überschreiten.

Die Analyse infrastruktureller Bahnung lenkt den Blick auf zahlreichen Grenzschutzbehörden, die nicht nur die Grenzoperationen durchführen, sondern auch Ereignisse, Menschen und Geschehnisse kategorisieren und so die Gegenstände erzeugen, die es zu regulieren gilt. Uns ist bewusst, dass diese Formen der Kategorisierung kritisch hinsichtlich ihrer Machteffekte analysiert werden müssen. Dies kann dieser kurze Beitrag nicht leisten. Um jedoch die technokratische Logik des Feldes für den_die Leser_in nachvollziehbar zu machen, haben wir uns entschieden, viele dieser Kategorisierungen aufzuführen. Wir bitten diese mit der nötigen kritischen Distanz zu lesen.

I. «Immutable mobiles» und die Zirkulation von Berichten

Wie organisiert man ein Berichtswesen zwischen mehreren Dutzend Behörden mit ihren jeweiligen Idiosynkrasien, Arbeitsroutinen und Praktiken sowie verschiedenen gesprochenen und institutionalisierten Sprachen? Wie wird interorganisational Anschlussfähigkeit hergestellt? Untersucht man die sich im Umlauf befindenden Berichte, so fällt auf, dass ihnen Templates zugrunde liegen. Frontex hat eigens für die *joint operations*, die etwa in Griechenland, Italien oder Spanien ausgeführt werden, Berichtstemplates für jeden Typ von Einheit angefertigt. Die Templates bestehen insbesondere aus Itembatterien, die nicht nur das zu Berichtende, sondern auch zahlreiche Antwortmöglichkeiten vorab

1 Bruno Latour: Drawing Things Together, in: Michael Lynch, Steve Woolgar (Hg.): *Representation in Scientific Practice*, Cambridge 1990, 19–67.

2 Susan Leigh Star, James R. Griesemer: Institutional Ecology, ‹Translations› and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907–39, in: *Social Studies of Science*, Bd. 19, Nr. 3, 1989, 387–420.

General Information		
Nr.	**Item**	**Mandatory**
1	Incident number	automatic
2	Reporting Unit	
3	Operational Area	yes
4	Primary incident type	yes
5	Secondary incident type	
6	Date of reporting	automatic
7	Detection date	yes
8	Type of detected by	
9	Latitude detection	yes
10	Longitude detection	yes
11	interception date	yes
12	interception place	yes
13	Latitude interception	yes
14	Longitude interception	yes
15	Search and rescue	
16	Operational area	yes
17	Eurosur border section	yes
18	Incident impact level	yes

Abb. 1 Ausschnitt aus der JORA *incident report item list*, erstellt von den Autoren

definieren. Auch wenn es nach wie vor einige freie Textfelder gibt, sind die Berichte mittlerweile zu großen Teilen auf diese Weise strukturiert.

Wie Bruno Latour ausgeführt hat, sind es Medientechniken wie etwa Berichte, Protokolle, Tabellen und Graphen, die es als *immutable mobiles* möglich machen, abwesende Phänomene zu simplifizieren und in zweidimensionale Darstellungen zu übersetzen, ‹reisefähig› zu machen und an anderen Orten zu präsentieren und neu zusammenzusetzen. Wir wollen hier nicht in die medienhistorische These Latours eintauchen, das würde diesen Beitrag sprengen. Für uns ist der Ausgangspunkt von Interesse, die Produktion von Wissen und die Übersetzung von Entitäten und Phänomenen von spezifischen Medientechniken her zu analysieren.

Insbesondere die Templatisierung der Berichte und die Standardisierung der Klassifikationen machen es möglich, dass Phänomene in Datensets übersetzt werden, die dann, und zwar ohne ihre Form zu verlieren, zwischen verschiedenen Orten und Organisationen zirkulieren können. Mittels der zunehmenden Verwendung von Itembatterien, die quantifizierbare Angaben anstatt Fließtext und Narrationen in verschiedenen Sprachen produzieren, werden die Berichte dezidiert von behördenspezifischen Vorgaben und Stilen des Berichteschreibens gelöst und dadurch leichter für andere Akteure anschlussfähig. Das Frontex *incident report*-Template etwa, in das später verschiedene Items aus den Einsatzberichten der Grenzkontrolleinheiten übertragen werden, besteht fast ausschließlich aus standardisierten und digital verarbeitbaren Antwortmöglichkeiten. Abgefragt werden die Größen von Populationen, differenziert nach Geschlecht, Alter und Herkunftsland, Ortsbestimmungen in Längen- und Breitengraden, diverse zeitliche Datierungen, oder die Schwere eines Vorfalls in Form eines *impact level*.

Als *immutable mobiles* können solche Medien aber nur dann zirkulieren, wenn auch ihr Kontext von Ort zu Ort ähnlich und stabil gehalten wird. Die Architektur der Templates erfüllt auch hier eine wichtige Funktion, indem sie die Handlungen der Berichterstattenden präskribiert. So sind etwa zahlreiche Items als *mandatory* gekennzeichnet. Erst wenn sie ausgefüllt sind, kann der Bericht abgeschickt werden. Frontex hat ferner viel Arbeit darauf verwendet, die verschiedenen Berichtstemplates unterschiedlicher nationaler Behörden und deren Klassifikationssysteme aufeinander abzustimmen und miteinander zu harmonisieren. Das beginnt schon bei der Sprache: Viele der Templates sind in englischer Sprache verfasst, sodass an bestimmten Stellen Übersetzer_innen eingesetzt werden müssen, um Berichte z. B. vom Griechischen ins Englische zu überführen. Wo kein Text notwendig ist, können viele der anklickbaren

Items von einem Bericht in einen anderen Bericht und über organisationale und sprachliche Grenzen hinweg einfach kopiert werden.

Nach einigen Übersetzungsschritten werden die Berichte schließlich in Datenbanken eingepflegt. Alle Daten des Frontex *incident report* etwa wandern in die Frontex *joint operation reporting application*-Datenbank (JORA), die Datensätze seit 2013 enthält. In diesem Sinne baut die skizzierte Informationsinfrastruktur einen gemeinsamen *network space*[3] auf, in dem Phänomene in Templates und standardisierte Itembatterien übersetzt werden und Berichte zwischen nationalstaatlichen Polizeibehörden und EU-Agenturen wie Frontex und Europol zirkulieren können. Im Modus der Replikation entsteht ein gemeinsamer Datenpool über organisationale Grenzen hinweg, dessen Daten an verschiedenen Stellen rekombiniert werden und dadurch interorganisationale Kooperation ermöglichen.

II. «Boundary objects» und die Vermittlung verschiedener Gebrauchskontexte

Wenn wir zu dem Berichtstemplate (Abb. 1) zurückgehen, sehen wir, dass es darin unterschiedliche Datentypen gibt. Neben Angaben zu Populationen finden wir Raum- und Zeitangaben, Angaben zu den involvierten Einheiten, zu *facilitators* oder zu benutzten Fahrzeugen. Diese Daten werden für sehr unterschiedliche nachfolgende Berichte relevant. Die sogenannten Frontex *support officers* (FSO) etwa besorgen Fahrzeuge oder Ausrüstung, kümmern sich um Wohnungen und Arbeitsplätze oder übernehmen Abrechnungen und Formalitäten. Für sie ist von Interesse, welche Teams mit welchen Fahrzeugen fuhren und wie lange sie im Einsatz waren, wie viele Kilometer sie gefahren sind oder ob es Verschleiß bei der Ausrüstung gab. Für das Frontex *operational management* im internationalen Koordinationszentrum in Piräus wiederum sind die Positionen, Zeitangaben und Kohortengrößen sowie Informationen über die involvierten Einsatzteams relevant, um Schichten und Einsätze zu planen. Angaben, insbesondere im offenen Eingabefeld zu Schmuggel und als kriminell eingestufte Aktivitäten, werden sowohl an die griechische Polizei als auch an Europol weitergegeben.

Durch das Zusammentragen in gemeinsamen Datenbanken und mithilfe von Filter- und Sortierfunktionen können Daten zudem auch auf unvorhergesehene Weise zu immer neuen Datensätzen zusammengebunden werden.[4] Dies geschieht etwa im Frontex *situation center* (FSC) oder in der Frontex *risk analysis unit* (RAU) – Kalkulationszentren, in denen Kanäle zusammenlaufen und miteinander verbunden werden. Hier werden Daten systematisiert, neu zusammengeschnürt und aggregiert und in Texte, Schaubilder, Karten und andere Medienformate eingearbeitet. Im FSC etwa lassen sich die Daten zu *border crossing incidents* als ein Layer auf einer interaktiven EU-Karte einblenden und für die Koordination und Planung von *joint operations* nutzen (Abb. 2).

3 Annemarie Mol, John Law: Regions, Networks and Fluids: Anaemia and Social Topology, in: *Social Studies of Science*, Bd. 24, Nr. 4, 1994, 641–671, hier 649.

4 Marcus Burkhardt: *Digitale Datenbanken. Eine Medientheorie im Zeitalter von Big Data*, Bielefeld 2015, hier 257.

Abb. 2 Frontex *situation center*, 2014

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Abb. 3 Inhaltsverzeichnis der Frontex-Risikoanalyse für 2019

Die RAU wiederum wertet Daten aus und erstellt regionale, nationale und europaweite Übersichten über sogenannte *illegal border crossings*, *migratory movements* und *secondary movements* oder Themenschwerpunkte (Abb. 3).

Was hier passiert, unterscheidet sich in mancher Hinsicht grundlegend von der Koordinationsform, die wir im vorangegangenen Kapitel mithilfe der Denkfigur der *immutable mobiles* beschrieben haben. Denn weder ist hier Formkonstanz der Berichte und Berichtselemente von besonderer Bedeutung noch müssen zur Weiter- und Wiederverwendung der Items und Itembatterien Nutzungs- und Deutungskontexte stabil gehalten werden. Vielmehr werden verschiedene Aktivitäten wie die Kartierung von *border crossing incidents* oder die Erstellung von Risikoanalysen oder Schichtplänen losgelöst von anderen und vorigen Berichtssituationen koordiniert. Wie ist das möglich?

Betrachtet man die Berichtstemplates, so fällt ihr listenförmiger Charakter auf. Untereinander sind Abschnitte aufgelistet, die eine endliche, aber prinzipiell erweiterbare Anzahl von Subkategorien umfassen. Listen zeichnen sich dadurch aus, dass man Items nebeneinander oder untereinander anordnen, hinzufügen oder entfernen kann.[5] Listen übersetzen komplexe Sinnzusammenhänge und Narrative. Sie definieren funktionale, zeitliche und andere Relationen in eine Struktur isolierter Einträge, deren Relationen re-arrangiert werden können.[6] Dies geschieht, indem Items zurecht- sowie eine bestimmte Anzahl von Items aus dem Geschehen herausgeschnitten werden.[7]

Diese Listenförmigkeit der Berichte realisiert das Nebeneinander von multiplen Gebrauchsweisen.[8] Wie Anna Leander betont, besteht die Besonderheit von Listen darin «[to] pragmatically […] link different contexts without being marred by their contradictions and incompatibilities».[9] In ihrer Listenform sind die Berichte an der arbeitsteiligen Produktion von Wissen beteiligt. Die Berichte sind daher in diesem Zusammenhang weniger *immutable mobiles* als *boundary objects*, d. h. Objekte, «die in verschiedenen sozialen Welten verschieden eingesetzt werden, aber dennoch eine Verlässlichkeit in verschiedenen Bereichen erzeugen».[10] Sie machen den Austausch zwischen

5 Jack Goody: *The domestication of the savage mind*, Cambridge 1977.

6 Marieke de Goede, Gavin Sullivan: The Politics of Security Lists, in: *Environment and Planning D: Society and Space*, Bd. 34, Nr. 1, 2016, 67–88, hier 70.

7 Urs Stäheli: Indexing – The Politics of Invisibility, in: *Environment and Planning D: Society and Space*, Bd. 34, Nr. 1, 2016, 14–29, hier 15.

8 Jan-Hendrik Passoth, Josef Wehner: Listen, Daten, Algorithmen. Ordnungsformen des Digitalen, in: Thorben Mämecke, Jan-Hendrik Passoth, Josef Wehner (Hg.): *Bedeutende Daten. Modelle, Verfahren und Praxis der Vermessung und Verdatung im Netz*, Wiesbaden 2018, 51–68, hier 58.

9 Anna Leander: The Politics of Whitelisting: Regulatory Work and Topologies in Commercial Security, in: *Environment and Planning D: Society and Space*, Bd. 34, Nr. 1, 2016, 48–66, hier 51.

10 Erhard Schüttpelz: Elemente einer Akteur-Medien-Theorie, in: Tristan Thielmann, Erhard Schüttpelz (Hg.): *Akteur-Medien-Theorie*, Bielefeld 2013, 9–70, hier 38.

Domänen und Umständen möglich, ohne dass Relevanzen abgestimmt oder gar konsensorientiert ausgehandelt werden müssen.[11] Indem Einsätze und Ereignisse in diskrete Items, quantifizierbare Einheiten und messbare und vergleiche Bewertungsschemata übersetzt werden, können sie in verschiedene und zunehmend digitale Weiterverarbeitungen eingespeist werden. Die einzelnen Items, die nicht in einem narrativen Sinnzusammenhang stehen, können für Abrechnungen, Schichtplanungen, Risikoanalysen, Kartierungen von Ereignissen und anderes je unterschiedlich verwendet werden. In diesem Sinne macht die Listenförmigkeit und Itemisierung der Berichte diese zu *boundary objects*, die lose Zusammenarbeit ohne Konsens zwischen Behörden und Abteilungen ermöglichen. Der durch die Informationsinfrastruktur aufgespannte gemeinsame *network space* ist in sich heterogen und umspannt multiple soziale Welten, die durch die Berichte und ihre listenförmige Struktur lose gekoppelt sind.

III. Schaltstellen der Übersetzung

Bisher haben wir herausgearbeitet, wie Berichte europaweit und zwischen Dutzenden von Behörden zum Zirkulieren gebracht werden. Berichte sind jedoch nicht nur Dokumente, die Wissen produzieren. Sie sind ebenso Teil der Organisation von Prozessen und der Attribuierung von Verantwortung und übersetzen Vorgaben und Absprachen zwischen den involvierten Parteien in die Praxis. So ist etwa im *operational plan* für «Poseidon», dem Vertrag zwischen Frontex und den griechischen Behörden, festgelegt, dass alle Aktivitäten der *joint operation* streng nach den nationalen Befehlsketten eines jeden partizipierenden Mitgliedsstaates zu verlaufen haben.

Zurück zur Vignette, mit der wir diesen Beitrag begonnen haben: Nach dem Einsatz verfasst der_die Verbindungsbeamt_in der griechischen Küstenwache einen Bericht. Er_sie füllt ein vorgefertigtes Template auf Griechisch aus und schickt diesen Bericht per E-Mail zum regionalen Hauptquartier der Küstenwache in Mytilini auf Lesbos, wo er ausgewertet und archiviert wird. Außerdem schreibt auch die Hafenaufsicht einen Bericht, der nun an die für die gesamte Inselregion zuständige Kommandantur der griechischen Küstenwache verschickt wird.

Auch wenn die Generierung und Auswertung eines Berichts komplexe Vorgänge sind, so ist der Akt der Übersetzung von einem Akteur zum nächsten, ähnlich wie bei einem Staffellauf, denkbar einfach gehalten. Für jeden einzelnen Bearbeitungsschritt gibt es eine_n definierte_n Adressat_in, in der Regel die_der Vorgesetzte, die_der den Bericht überprüft und abnimmt. Die jeweiligen Berichte enthalten immer auch Informationen über die Instanz, die den Bericht erstellt, der so zurechenbar gemacht wird. Diese Berichtsketten sind der Basismodus des Berichtswesens. Sie lassen sich ebenfalls bei den Grenzschutzeinheiten von anderen beteiligten Polizeibehörden beobachten. Auch sie schicken ihre Einsatz- und

11 Susan Leigh Star: This Is Not a Boundary Object: Reflections on the Origin of a Concept, in: *Science, Technology, & Human Values*, Bd. 35, Nr. 5, 2010, 601–617, hier 602.

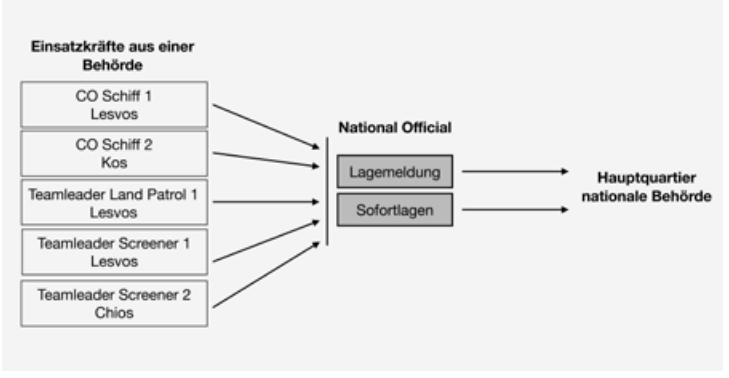

Abb. 4 Schaltstelle Zusammenführung

Schichtberichte stets an ihre jeweiligen Vorgesetzten, die *national officials* (NO). Auf diese Weise ermöglichen Ketten simpler Übersetzungsschritte nicht nur, komplexe Situationen arbeitsteilig an eine Anzahl von (nicht-)menschlichen Akteuren zu delegieren, sondern (re-) produzieren auch behördenspezifische Berichts- und Befehlskanäle mit organisationalen Hierarchien und Zurechenbarkeiten.

Folgt man diesen Trajektorien der Berichterstattung, dann zerfällt der die Behörden überspannende *network space* in eine Vielzahl von unverbundenen Akteurs-Netzwerken, deren Grenzen entlang einzelner Behörden verlaufen. Aber wie genau werden diese nun im Rahmen der *joint operation* miteinander verbunden? Im Folgenden werden wir drei unterschiedliche Typen von Übersetzungsoperationen herausarbeiten, die wir als *Schaltstellen* bezeichnen. Schaltstellen sind in der Lage, Berichte und deren Inhalte an bestimmten Punkten weiter- und umzuleiten, abzuzweigen oder zu vervielfältigen und auf diese Weise zwischen den verschiedenen Behörden zu distribuieren.

III.I Zusammenführung

Der_die Kapitän_in des Bootes, auf dem auch der_die Verbindungsbeamt_in der griechischen Küstenwache seine_ihren Dienst versah, verfasst ebenfalls einen Bericht über den Einsatz und schickt diesen an seinen_ihren Vorgesetzte_n, den_die *national official* (NO) der jeweiligen nationalen Polizeibehörde. Dies ist in diesem Beispiel die deutsche Bundespolizei. Die NOs sind die ranghöchsten Beamt_innen der an der *joint operation* beteiligten Behörden. Nachdem der_die NO der Bundespolizei alle Einsatz- und Schichtberichte der Einsatzteams gesammelt hat, schreibt er_sie eine tägliche Lagemeldung. Dafür übernimmt er_sie aus den Berichten die Angaben dazu, welche Einheiten für welche Zeitspanne in welchem Gebiet im Einsatz waren, vergleicht verschiedene Angaben zu den Anlandungen des Tages aus dem gesamten Einsatzgebiet und erstellt einen sogenannten Sachverhalt, in den auch aktuelle Erkenntnisse etwa über Umstellungen von Schichtplänen oder den Einsatz von neuem Equipment einfließen (Abb. 4).

Die Übersetzungsarbeit der NOs punktualisiert die unterschiedlichen Einsatzberichte und übersetzt sie in einen neuen Bericht.[12] Dieser, geschrieben und unterzeichnet von einer einzigen Instanz, erlaubt es, von all den anderen Berichten abzusehen und die Verantwortung über die Richtigkeit und Vollständigkeit der Angaben bei dem_der NO zu suchen. Durch diese Simplifizierungs- und Zurechnungstechnik kann der neue Bericht als ein

12 Streng genommen handelt es sich hier um einen obligatorischen Passagepunkt. Vgl. Michel Callon: Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St Brieuc Bay, in: *The Sociological Review*, Bd. 32, Nr. 1, 1984, 196–233.

Zwischenglied behandelt werden, das ‹objektive Daten› für die Weiterverarbeitung bereitstellt.

III.II Gabelung

Im lokalen Koordinationszentrum der griechischen Küstenwache (LCC) auf Lesbos sitzt ein_e griechische_r Beamt_in. Er_sie erhält den auf Griechisch verfassten Bericht des_der Verbindungsbeamt_in wie auch den auf Englisch geschriebenen Bericht des_der Kapitän_in und vergleicht die beiden Versionen. Wenn die Berichte und die via Telefon und andere Kanäle erhaltenen Angaben übereinstimmen, wird der Bericht auf Griechisch weiter an die *harbour masters* geschickt. Nun wartet er_sie noch auf die Berichte von anderen Einheiten, etwa von den sogenannten *screeners* und *fingerprinters* aus Moria, und erstellt daraus einen weiteren Bericht für Frontex: Er_sie überträgt Schritt für Schritt die Daten aus den diversen Berichten in ein Template des Online-Informationssystems JORA und schickt die Daten so an das Frontex-Hauptquartier nach Warschau. Diese Koordinationsform, die beinahe identische Kopien erstellt, jedoch in unterschiedliche Verwendungszusammenhänge einbettet, bezeichnen wir als Gabelung (Abb. 5).

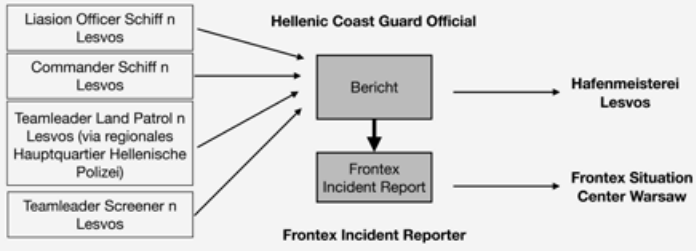

Abb. 5 Schaltstelle Gabelung

Die Übersetzung der Daten ist deshalb möglich, weil diese_r Beamt_in der griechischen Küstenwache von Frontex mit einer zusätzlichen institutionellen Rolle ausgestattet worden ist. Sie_Er ist in zwei unterschiedliche Berichtsregime einbezogen – in das Regime der griechischen Küstenwache mit dem *harbour master* und in das Frontex-Regime des *incident reporting* mit dem Frontex *situation center* als Zielpunkt. Sie_Er wechselt zwischen ihren_seinen beiden Rollen hin und her. Die Templates können dabei als «technology of accountability» verstanden werden, die als Ressource vor Ort zur Verfügung stehen und die Praktiken der Berichterstattung durch vorgefertigte Antwortmöglichkeiten, verpflichtend auszufüllende Eingabefelder und Zeitmarker in einen «accountable course of intelligible and effective action» überführen.[13] Die Templates sind aber auch Teil eines Kontrollregimes, das eine temporale Ordnung zu organisieren und im Rahmen dessen Verantwortlichkeiten zu attribuieren sucht. So machen Angaben zu den Berichterstattenden sowie diverse Zeitangaben bezüglich der Erstellung und Bearbeitung des Berichts nachvollziehbar, wer einen Bericht wann erstellt hat.

Die Schaltstelle Gabelung isoliert zudem die Berichtsketten von Frontex und griechischer Polizei voneinander und invisibilisiert den Akt der Übersetzung. Auch wenn der Frontex-Bericht von einer_einem griechischen Beamt_in verfasst und aus griechischen und anderen Polizeiberichten befüllt wird,

13 Lucy Suchman: Centers of coordination: A case and some themes, in: Lauren B. Resnick u. a. (Hg.): *Discourse, Tools, and Reasoning. Essays on Situated Cognition*, Berlin 1997, 41–62, hier 54.

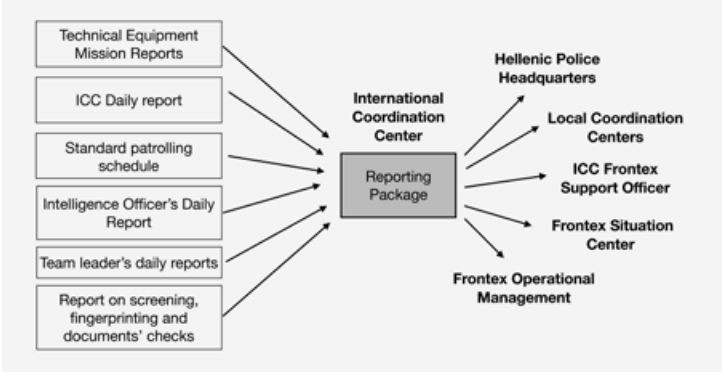

Abb. 6 Schaltstelle Streuung

tauchen derartige Referenzen in den Berichten nicht auf. So suggerieren die beiden Berichte zwei Berichtsketten, die entlang von organisationalen Grenzen verlaufen (siehe Abb. 5).

III.III Streuung

Im internationalen Koordinationszentrum (ICC) in Piräus sitzt ein_e weisungsbefugte_r griechische_r Beamt_in, der_die ebenfalls eine zusätzliche Frontex-Rolle innehat. Er_Sie koordiniert die täglichen Operationen und ist Vorsitzende_r des *joint coordination board*. Als ICC-Koordinator_in erhält er_sie täglich Berichte von allen an der Operation beteiligten Teams (Abb. 6).

Wenn er_sie alle Berichte beisammenhat, schnürt er_sie daraus ein *reporting package* und schickt es an eine Reihe von Akteuren: zurück an die lokalen Koordinationszentren, an das Hauptquartier der griechischen Polizei, an die Frontex *support officers* im ICC, an das Frontex *situation center* in Warschau sowie an das Frontex *operational management*. Er_Sie übersetzt nicht einzelne Datensätze, sondern multipliziert ganze Berichte. Die Berichtsketten verlaufen nicht entlang von, sondern quer zu Behördengrenzen. Sie punktualisieren und simplifizieren nicht die Berichte der Feldeinheiten, sondern vervielfältigen sie und schicken sie an die wichtigsten Kalkulationszentren der *joint operation*. Die Schaltstelle Streuung sorgt dafür, dass neben der innerbehördlichen Bahnen der Berichterstattung zusätzlich alle Akteure mit allen Berichten versehen werden. Die Berichte werden für die Auswertung und Analyse genutzt, aber auch für die Überprüfung und das Gegenlesen anderer Berichte.

IV. Fazit und Diskussion

In diesem Artikel haben wir die Denkfigur infrastruktureller Bahnung zu verkomplizieren versucht. Ausgehend von der Frage, wie EU und nationalstaatliche Grenzschutzbehörden zusammenarbeiten und spezifische Populationen, Grenzübertritte, Migrationsbewegungen und andere Phänomene als Gegenstände von Migrations- und Grenzkontrolle hervorbringen, haben wir uns der Erstellung und Zirkulation von Berichten zugewandt und mehrere Koordinationsmodi herausgearbeitet, die verschiedene Räume des Fließens und des Werdens von Daten hervorbringen. Zunächst haben wir die Berichte als *immutable mobiles* analysiert und gezeigt, wie Berichte durch Templatisierung zunehmend aneinander angeglichen und vergleichbar gemacht werden. Prozesse der Standardisierung definieren vorgefertigte Antwortmöglichkeiten und machen diese maschinell verarbeitbar und aggregierbar. Diese Kaskade von Übersetzungen

von Daten im Modus der Replizierung produziert unterschiedlichste Outputs und bringt einen Behörden überspannenden *network space* hervor.

Dieser *network space* ist allerdings heterogen und umfasst multiple soziale Welten, die durch die Berichte lose gekoppelt werden. Als *boundary objects* erlauben die zunehmend listenförmig organisierten Berichte, Sinn- und Narrationszusammenhänge in eine Struktur isolierter Einträge zu übersetzen und so ein ‹entleertes› Zusammenarbeiten ohne Konsens zwischen Behörden und Abteilungen zu ermöglichen.

Berichte bringen in ihrem Zirkulieren jedoch auch organisationale Prozesse und Strukturen hervor. Wie unsere Analyse gezeigt hat, hangeln sich die Berichte ganz nach Maßgabe des Frontex *operational plan* an den Hierarchieleitern einzelner Behörden entlang. In dieser Hinsicht lässt sich der *network space*, der sich aus einer Vielzahl von Akteurs-Netzwerken mit Grenzen entlang einzelner Behörden zusammensetzt, als fragmentiert begreifen. Verbunden werden diese punktuell und passgenau durch verschiedene Schaltstellen: Die Schaltstelle Zusammenführung führt mehrere Berichte innerhalb einer Behörde zusammen und lässt daraus einen neuen Bericht hervorgehen, der dann an die Zentrale weitergeschickt wird. Infrastrukturelle Bahnung verläuft so entlang der Hierarchie einer Behörde. Die Schaltstelle Gabelung sammelt mehrere Einsatzberichte, um dann einzelne Datensätze in einen Berichtskanal von Frontex zu übertragen. Auf diese Weise werden Daten von einem behördlichen Berichtskanal in einen anderen überführt, wobei die Übersetzung selbst invisibilisiert wird. Die Schaltstelle Streuung schnürt an zentraler Stelle ein *reporting package*, das alle involvierten Kalkulationszentren mit verschiedenen Berichten für Auswertungs- und Überprüfungszwecke versorgt. Diese Schaltstelle leitet Berichte nicht entlang organisationaler Grenzen weiter, sondern vervielfältigt und verteilt sie über organisationale Grenzen hinweg. Auf diese Weise wird neben passgenauen und punktuellen Verbindungen zwischen Akteur-Netzwerken in einem fragmentierten *network space* auch ein sternförmig angeordneter *network space* etabliert, der mittels einer zentralisierten Verteilerstelle die an der *joint operation* beteiligten Akteure mit Daten versorgt.