Spy, track and archive. The temporality of visibility between JORA and EUROSUR.

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Abstract:
This article focuses on the temporalities of visibility that is at stake in the functioning of two mapping-monitoring softwares devised by Frontex EUROSUR and JORA. Through a study of border practices and security devices that builds on interviews and direct observation, the article shows that while these systems elaborate on data and information collected in real-time, they work as archives for generating future migration risk scenarios and not for border surveillance purposes. After illustrating in detail the functioning and the modes of visualisation of JORA and EUROSUR, the article takes into account how national police officers, Frontex and the Navy use these devices, and how risk analyses are produced. The articles demonstrates that these monitoring-mapping devices are sustained by coeval temporalities: the detection of migrants "on the spot" coexists with a future-oriented temporality and with an archival one. The second part of the article analyses the impact that mapping-monitoring softwares have on migrant journeys and migrant lives. It concludes by bringing attention to the ways in which migrants in part strategically appropriate and twist the temporality of security and the field of visibility enacted by these devices.

Keywords:
Eurosur, temporality, visibility, Jora, Mediterranean, migration.

Introduction:

The real-time detection of "illegal" migrant border crossings is an activity performed daily by the national police, military forces – such as the Navy – and European agencies – such as Frontex and the European Maritime Security Agency (EMSA) – in order to visually capture "unauthorized" movements at the external frontiers of Europe. The detected "irregular" border crossings are translated into digital interactive maps that have the twofold function of storing data and providing an updated situational picture of what happens at the borders of Europe. EUROSUR and JORA are the two European migration mapping software systems, both managed by the Frontex agency. They can be seen as two complementary targeting gazes on migration, in which the *track and archive* mapping activity is performed according to 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 of preemptive spaces of governmentality. That is, migration movements are simultaneously the object of an archival function, of real-time monitoring and of future-oriented risk analyses: they are *spied*, *tracked* and *archived t*hrough mapping-monitoring software in order to open

up future spaces of intervention to make migration a governable phenomenon. The gesture of visualising migrant movements on the map is ultimately part of the datafication of mobility and digitalisation of the frontier.

This article does not focus on migration control, nor on visibility in itself. Instead, it deals, firstly, with what I call the temporalities of visibility that migration mapping-monitoring devices are predicated upon, and on the spaces of intervention that are opened up through them relying on an archival function. Secondly, it takes into account the impact that these mapping-monitoring devices have on the migrants. It investigates the nexus between the temporalities of visibility at play in these mapping-softwares and the "spaces of governmentality" (Tazzioli, 2015) opened up through the use of these systems – thus, the "co-constitution of temporality and spatiality" (Aradau, van Munster, 2012:2). This echoes Derek Gregory's insight into the articulation between "the space of constructed visibility" through digital maps and "the capacity to produce a target" (Gregory, 2010: 277), arguing that this latter relies on the production of truth claims through which criteria of "risk" and/or "dangerousness" are established. However, these do not point to specific targets, but structure a more general and long-term based state "preparedness" for potential migration threats and border stress. I introduce here the expression *track-and-archive gaze,* that refers to the twofold goal of these monitoring devices which consists in detecting migrants in (nearly) real-time and, building on the data collected, crafting spaces of intervention that are future-oriented. As Sabrina Ellebrecht has remarked, "the virtual network" visualised by software like Eurosur, and Jora is "the medium for the creation of a new spatial border" (Ellebrecht, 2014: 240). Hence, the monitoring function of mapping devices is of detection and, at once, of "data capture" (Pallister-Wilkins, 2016). As I will show later, the activity of data capture is not made primarily for intervening in real-time but for acting out future risk scenarios by enforcing states' capacities to react against potential "significant uncertainties"[1].

The article is structured around two main aspects. It investigates the kind of gaze that is mobilized through these mapping devices from the point of view of the temporalities that underpin their functioning. Then, it explores the material effects that this has on migrant lives and movements. The first part focuses on the functioning of JORA and EUROSUR, investigating their twofold task – monitoring in real-time and storing data for crafting pre-emptive migration risk scenarios. Then, the article brings attention to the temporality of migration mapping and monitoring systems, describing in detail the multiple epistemologies that sustain them. As I will show, these monitoring-mapping

[1] http://frontex.europa.eu/assets/About_Frontex/Governance_documents/Work_programme/2017/Programme_of_work_2017.pdf

devices are sustained by *coeval temporalities:* the detection of migrants "on the spot" coexists with a future-oriented temporality and with an archival one. The article moves on, interrogating the impact on migrant lives and journeys, analysing how border security is enacted at the level of governing migration at a distance, and how it dovetails with narratives about human security. It concludes by analysing how migrants tactically deal with the condition of being monitored at sea.

This essay contributes to the academic debate on the relationship between mapping, monitoring technologies and the securitisation of borders, exploring the specific temporalities of visibility that are at play. The temporalities of visibility of monitoring devices become a lens for understanding the spaces of governmentality that these latter open up and, relatedly, the temporality of security that is at stake in governing migration at a distance. The argument that I push forward is that migration mapping software, such as EUROSUR and JORA, is not devised for border surveillance purposes, nor for acting on the spot, but for tracking migration movements, collecting and archiving information in order to craft future-oriented migration risk scenarios. From such a perspective I will explore how the security of the external frontiers of Europe is conceptualized and how it is enacted by states. More precisely, it is the entanglement and the blurring between human security – conceived as the security of the migrants – and border/state security – against migrants – that officially sustains and legitimises the implementation of monitoring and mapping tools. Indeed, EUROSUR has been presented as a tool "to reinforce border surveillance" *and* as a "truly European response to save the lives of migrants travelling in overcrowded and unseaworthy vessels, to avoid further tragedies in the Mediterranean"[2]. Taking into account two European migration mapping and software systems for *tracking and archiving* migration movements, EUROSUR and JORA, the article shows that the use of mapping-monitoring devices for detecting migrants has concrete consequences not only – and not mainly – on the spot, with migrants who can be intercepted at sea in real time, but also for implementing measures and political technologies for preventing and obstructing future migrant crossing along a certain route.

The article builds on the literature on the temporality of security that traces differences between on the one hand anticipatory knowledges led by a precautionary principle, and, on the other, anticipatory security practices underpinned by a preemptive logics. While the former are grounded on calculative practices which make it possible to "act before the identified threat reaches a point of irreversibility" (Ewald, 2002: 287, cited in Anderson, 2010: 789), the latter are less about prediction, and instead concern the "multiple potential futures that are rendered actionable (or liquid) in the

[2] http://europa.eu/rapid/press-release_IP-13-1182_en.htm

present" (De Goede et al. 2014: 413; see also Anderson, 2010; Aradau, van Munster, 2011; McCulloch, Wilson, 2015). That is, unlike precautionary logics, preemptive security technologies are predicated on the fundamental non-calculability of future threats that consequently require specific political technologies for governing phenomena, that build precisely on their partial unpredictability.

This piece considers the preemptive rationale which sustains the temporalities of visibility at stake migration mapping software, and more precisely the future oriented temporality of the spaces of interventions that are crafted by European agencies. This analysis of migration mapping software brings a contribution to such a scholarship by focusing on three main peculiar points. First, it points to the central role played by the archiving of migratory events in generating future-oriented spaces of governmentality. The production of "historical patterns" of migratory events and the data storage activity are used not for predicting or calculating forthcoming threats but, rather, for acting out potential and not fully definable migration risk scenarios (Cote-Boucher, 2017).

Second, it shows that, unlike the temporality of the catastrophe, it is not a question of a "tipping-point" that migrants' arrivals could trigger (Aradau, van Munster, 2011) but, rather, of spaces of migration governmentality crafted for managing the constitutive "migration crisis", by diverting, troubling, and to some extent anticipating migration routes. Third, it contends that differently from security practices that "aim to act on threats that are unknown and recognized to be unknowable, yet deemed potentially catastrophic" (DeGoede et al. 2014: 415), the government of migration at a distance is predicated upon defined "risks" – i.e. migrants – whose movements, routes and numbers however remain partially unpredictable. This is not (only) because of the lack of data but also because of the "incorrigibility" (De Genova, 2010) of migrations and the constitutive impossibility to fully govern them, due to migrants' tactics of appropriation and constant reinvention of strategies of movements.

Such a take on the temporality of security enables clarifying that this essay does not deal with visualisation, nor with visibility per se, but with the temporalities of visibility that are at stake in migration mapping software. Concurring with the idea that a particular mode of visuality is called up and into being in contemporary articulations of sovereignty" (Amoore, 2007: 142), however, the article shows that EUROSUR and JORA cannot be fully grasped through the lens of "vigilant modes of looking" (144): indeed, this migration mapping software works by producing and storing migratory events, combining together different temporalities of visibility and enacting a highly selective gaze.

Unpacking the temporalities of visibility through a study of mapping devices:

JORA and EUROSUR are not tackled here through a comparative approach that aims at finding out the differences between these two pieces of software. Rather, both of these mapping-monitoring devices work as archives of migrants' detected movements for generating future-oriented migration risk analyses. An investigation of EUROSUR conducted in the light of, and in combination with, an analysis of JORA – which actually remains quite unexplored in the academic literature – makes it apparent that real-time intervention is not the goal of these systems. While EUROSUR tends to be studied in itself, as a communication network, by focusing on EUROSUR and JORA together it becomes possible to bring to the fore the temporality of visibility that is at stake in governing migration at a distance and the interconnectedness of these mapping-softwares for generating migration risk scenarios.

EUROSUR has been analysed by scholars in the fields of migration studies and security studies, taking into account inter-state relations (Bellanova, Duez, 2016; Jeandesboz, 2011) and the politics of control and visibility (Ellebrecht, 2014). However, the temporalities[3] of visibility that sustain the functioning of these monitoring-mapping devices are quite unaddressed in the literature. Yet, the temporalities of visibility are not tackled here simply for the purpose of adding a further analytical angle to the literature. Rather, such an angle helps in understanding two mutually related aspects. First, it allows us to grasp what these devices do. Second, it makes possible an unpacking of the conception of border security that is played out. In other words, the articulation between the temporality of visibility and governmentality is a constitutive one in governing migrants at a distance and in performing border security activities; indeed, monitoring-mapping devices such as EUROSUR and JORA contribute to the structuring of a field of visibility which opens up multiple spaces of intervention to prevent, control and hamper migration movements. More precisely, the coeval temporality of visibility that is performed through monitoring devices makes it possible to intervene at a distance to govern migration by anticipating migrant routes, on the basis of data stored, as well as by monitoring and intercepting migrants in real time.

If monitoring and mapping devices are not missing from scholarship on security and migration (Jeandesboz, 2011; Heller, Pezzani, 2014; Marin, 2011; Seiffarth, 2012), they are however mainly studied through a reading of EU documents or grounded on interviews conducted with the actors who manage those dispositives, while there is far less attention paid to their effective functioning. In particular, as Dijstelbloem, Van Reekum and Schinkel rightly stress, what is missing in the literature is a "political topology that is not wholly structured by a 'surveillance apparatus', but which

[3]In the article I use in some places the term "temporalities" as a plural precisely to stress the coexistence of different tempos and functions: real-time detection, archival function, and futures-oriented risk analysis.

transacts the workings of such an apparatus with migrants, vessels and tactics at sea" (Dijstelbloem et al., 2017: 225). At the same time, a burgeoning scholarship has investigated the proliferation of border surveillance technologies, ranging from biometric identification controls to smart borders and visualisation (Aas, 2005; Bigo, 2002; Dijstelbloem et al. 2017; Muller, 2010; Wilson, Weber, 2002). Nevertheless, the mapping-monitoring devices I take into account do not work through individual encounters between technologies and migrant bodies. Moreover, I approach these mapping-monitoring devices by shifting away from the primacy of the visual as such, towards an account of the mutual constitution of modes of visualisation, temporality of security, and new spaces of interventions.

The modes of government that are enacted through these mapping-monitoring systems do not work through individualising mechanisms of control: they look at migrants as parts of groups – e.g. Xnumber of migrants on a vessel – and as detected migrants' passages. The detection of migrants in real-time is not primarily conducted for border surveillance purposes but to build migration risk analyses and envisage preemptive spaces of governmentality that strengthen states' readiness to potentially react to border pressures and hybrid threats[4]. This argument could appear in contradiction with the very definition of EROSUR which is the "European Border Surveillance System". However, by bringing attention to the discrepancy between real-time detection and the deferral in time concerning mapping representation, the notion of border surveillance appears as partially inadequate to account for the archival function of EUROSUR and JORA and the production of future-oriented spaces of governmentality. Second, and relatedly, if we consider the politics of mapping that sustains JORA and EUROSUR, it is noticeable that these pieces of software represent neither migrants nor migration routes: instead they translate migrants' detected presences and passages into governable events. Such a consideration on mapping goes beyond analyses on visualisation, and actually reveals that what matters for EUROSUR and JORA's purposes is not the representation of migration movements per se but, rather, migration risk scenarios, which ground on the archival function of these systems. In fact, as I mentioned above, what is at stake is a "track-and-archive" gaze which strives to detect and spy on migrants in real-time in order to use such material to craft future-oriented migration risk scenarios.

On a methodological level, this paper is grounded on interviews with institutions and on direct observations of the functioning of EROSUR and JORA that I conducted between 2014 and 2016. I entered the control room of JORA in Pratica di Mare and of EUROSUR in Rome through official

[4] http://frontex.europa.eu/news/frontex-completed-first-set-of-vulnerability-assessments-hKB3h4

requests made, respectively, to Frontex and to the EUROSUR National Coordination Point located in the Department of Public Security of the Italian Home Office in Rome. Yet, I was allowed to see the data visualised only on those days that I entered the monitoring rooms, and to ask for explanations about the way in which data are collected, shared, and visualized. As agreed during the interviews, in this paper I won't show any pictures of EUROSUR and JORA, since it is forbidden to take pictures inside the operational rooms. Such an empirical investigation is combined with a methodological approach that, building on the material turn in critical security studies (Aradau, 2010; Hansen, 2013; Squire, 2015), aims at "politicizing the materiality of security technology" (Bourne et al. 2015, p. 308)[5]. This involves conceiving of "border security as practice", and taking "securitisation not just as a discursive process but at the level of its imbrication in technological processes" (Walters, 2014b: 102; see also Cote-Boucher, et al. 2014). I scrutinize how the spaces of governmentality they contribute to are crafted – instead of starting from discourses and institutional documents on security and seeing how they are "applied" in practice.

In this sense, the study of EUROSUR and JORA has been conducted on the basis of an "analytics of devices" (Amicelle, et al. 2015; Ruppert, et al. 2013); this latter centres on a Foucaultian conception of technology corresponding not to technical tools but to dispositives that generate and sustain practices and methods for governing subjects. Yet, instead of focusing on how different actors operate at the border (Mountz, 2010; Salter, 2012), this article brings a contribution to this literature by investigating the materialities of border security and the ways in which this latter is enacted through a specific articulation between temporalities of visibility and spaces of governmentality.

The coeval temporalities of mapping-software:

JORA, which was activated in 2011, is "an information system used by Frontex and border guards of the EU member states and participating third countries where incidents are registered and validated by Frontex"[6]. For the purposes of this article, it is worth highlighting the most relevant differences between the two pieces of software. Firstly, unlike EUROSUR, whose data are locally validated by each National Coordination Point, JORA is a centralized system – Frontex validates and

[5]This research has been realized through interviews and visits conducted in Italy with national and European actors in charge of managing migration monitoring and database tools. I visited the Eurosur Italian coordination point based in the Italian Home Office in Rome (July 2014, November 2015) the Frontex headquarters in Catania (November 2016) and Rome (January 2016), and interview with the Spanish company GMV (June 2016) and EMSA (August 2016). I also conducted interviews with the Italian Navy at the Navy Headquarters in Rome, in March 2014 and in July 2015 and the Italian Coast Guard (July 2016) and Doctors without Borders (Rome, August 2017).

[6]http://www.societalsecurity.eu/index.php?page=eu-crisis-management-systems#expand57

manages all data from Warsaw. Secondly, JORA stores information concerning Frontex Joint Operations only, which can then be shared with EUROSUR, while this latter contains all data related to cross-border crime or irregular migration events spotted at the external frontiers of Europe. Thirdly, JORA's interface is much more complex than EUROSUR's, and more detailed in its data collection, due to the different angles through which a certain "migratory event"[7] is recorded in the system. Finally, JORA is structured on a multi-level access system, while EUROSUR has only one access point.

January 20, 2016. Inside the monitoring room of Frontex's Italian headquarters in the military airport of Pratica di Mare near Rome, a Frontex officer accesses JORA software, entering a secured username and password and updating the map with a new migratory event. The "event" in question is a migrant vessel rescued by the Navy the day before near the island of Lampedusa: "since the event is by now closed, it can be visualized on the map, after being approved by the Frontex main headquarters in Warsaw" (Interview 1). After a few seconds a new coloured dot has been displayed on the map, containing heterogeneous information and data collected by national authorities and Frontex officers: the number of migrants on board, their nationality, the exact location and time of the rescue operation, and the nationality of the suspected smugglers.

JORA works more as dashboard software than as a monitoring mapping system, and its economy of visibility is based on a *multi-scalar gaze.*[8] Through such an expression, I refer to the multiple levels that are contained within JORA and that can be accessed simultaneously. Each of these level is characterised by a specific regime of visibility that, in turn, helps us to grasp the specific temporality of security which is played out in these devices. It is formed of five screens, each of them reporting a different situated-gaze on migration and grounded on a specific *sight epistemology.* That is to say, each screen generates a certain knowledge on the same migratory event through a specific visualisation mode. Importantly, such a sight epistemology includes a certain assemblage of temporalities of visibility – and can be named as a *temporal-sight epistemology*.

One screen is formed of coloured dots corresponding to "migratory events" detected in the Mediterranean. By clicking on a dot, the description of the event is displayed and contains information about the number of migrants, their nationalities, eventual smugglers arrested and the date and the location of the event. Yet, migratory events are not displayed on JORA in real-time but "only when

[7]"Migratory event" is the technical expression employed by Eurosur and Frontex officers for designating migrant border crossings that are relevant to these systems.

[8]"JORA has had an important streamlining effect in the way that incidents arising from Frontex operations are processed. Before JORA, in 2011, FSC was able to process data from only six of the 16 Frontex operations carried out in that year" (Frontex, *Twelve seconds to decide,* 2014, p. 41).

it is finished and we have all information about it; this means that it could take from 1 to 3 days"[9] . Thus, this map is based on a what can be called an *epistemology of the even*t which consists in representing the occurrence of migrants intercepted or rescued through the data collected about them and about the moment of their being detected by radar. A second screen consists in the vessel tracking system, but that displays the location of the boats only after a validation step in which data are checked. In this case it is a nearly real-time epistemology of sight that is at stake, since it is the screen which most approximates the idea of a situational awareness picture.

A third screen is grounded on an archival "aerial epistemology" (Adey, Whitehead, Williams, 2013: 13) which is constantly updated in time and generates a temporal narrative of spaces: it consists of a set of comparative satellite images, taken from the European Space Agency (ESA): Frontex asks the ESA to provide them with satellite images of specific locations taken through the satellites Sentinel I and Sentinel II[10] at different times, in order to see how a certain space has changed over time. For instance, a set of images contained in JORA is of a location on the coast of Sabrata in Libya: the satellite image taken in March 2015 shows a more or less void zone, with no relevant movement or presence, only few boats on the beach. A few months later (October 2015), an increased number of vessels and persons in the same area were detected by the satellite, proving that Sabrata is a migrant point of departure with an important smuggler network, crafting in this way a temporal narrative of the spatial transformations occurring in a targeted place. Thus, the temporality of visibility related to spatial changes potentially opens up a field of intervention that is not only future-oriented but also involves a struggle over the spatial economy – in this case, against the economy of smuggling – more than punctual actions for intercepting a vessel. Material evidence and traces that mark spatial transformations over time leads Frontex's officers to change action strategies: in the above-mentioned case, satellite images of the same place taken at a temporal distance provide evidence of the emergence of Sebrata as an important and highly surveilled migration departure point. Therefore, targeted places are monitored over time to grasp spatial formations at the "threshold of detectability" (Weizman, 2015). Such an expression is used here to refer both to spaces that get relevance due to their changed nature, and to the mobile boundaries between objects that are undetected and objects that are the target of a secret or public gaze. While the politics of targeting individuals, insightfully analysed by Gregoire Chamayou, is fundamentally based on a "life pattern" strategy

[9]http://www.societalsecurity.eu/index.php?page=eu-crisis-management-systems#expand57

[10] These satellites were devised not for detecting migration but for other surveillance purposes. Moreover, as stressed by researchers at the BlueHub research centre of the European Union, these satellites are configured more for monitoring the land than the sea (Skype interview, July 28, 2016).

(Chamayou, 2015), this is instead grounded on a spatial pattern logic, which takes into account how a certain space has transformed over time and how such transformation indicates a change in the economy of that place. The final screen of JORA is an archive of the images of the migrant vessels intercepted and seized at sea: neither migrants nor migration movements are the main target here but the material "logistic of migrant crossing" (Garelli, Tazzioli, 2017). In this case, the temporality of visibility that is played out is not related to a specific intervention but, rather, it forms the basis and the archive of the states' knowledge about migrant logistics of crossing. These multiple layers of sight do actually also reveal an irreducible heterogeneity of temporalities upon which different modes of intervention are structured (Cote-Boucher, 2017). I suggest that it would be misleading to encapsulate these multiple temporalities of visibility into a main and dominant one: in fact, it is precisely the intertwining of an archival function with a future-oriented one that opens up spaces of governmentality and strengthens states' preparedness to potential uncertainties.

Therefore, each migratory event is apprehended from different angles: as a single event – the dot containing information – as a factor that impacts on the level of risk of a certain frontier, or from the point of view of the spatial infrastructures that make it possible for an event to occur. In this case, the mapping gaze takes migration as a phenomenon to govern, discipline and contain. What is relevant to the functioning of JORA is not the identity of the migrants detected, but the translation of a border crossing or of a migrant boat into an "event" and its degree of governability. Ultimately, it is the migrant vessel that is targeted as a suspect object, and that it is scrutinized both in its trajectory and in its composition. What is relevant at this stage is not the question "*who are the migrants on board?"* but, rather, one of "*what is, approximately, the estimated number of migrants on the vessels?"* in order to assess the "size" of that event.

Hence, it is a mapping gaze that does not look at migrants per se, but instead crafts migratory events as phenomena to govern and as a complex of human and non-human elements: the migratory event is captured and scrutinized from different spatial scales and through the "logistics spaces" (Cowen, 2014: 2) of migration – e.g. the spaces of migrant departures, infrastructures and transports. In this regard, William Walters's considerations on "viapolitics" enable the bringing of attention to the centrality of vehicles for coming to grips with the contested field of migration governmentality: "a focus on the material properties of the mode of transportation […] can illuminate how different vehicles and their systems offer limits and possibilities for migration politics" (Walters, 2014a: 12). Thus, the logistics of migrant crossing that these systems look at and capture is what is translated into the abstract spaces of governmentality. In order to hamper migrants from

crossing the sea and becoming lives to rescue, actually the target of the mapping gaze has to shift from the migrants to their logistics of crossing.

The deferred temporality of migration governmentality at a distance.

EUROSUR, the European External Border Surveillance System, was launched by the EU in December 2013: conceived as "the system of the systems"[11], it has been presented as a tool for building a common pre-frontier intelligence picture of what happens at the external borders of Europe and as a mapping database elaborating information logged in different national and European monitoring devices and databases[12]. The real-time map picture that EUROSUR is expected to generate is not about any events occurring at the external frontiers, but only of the illegal crossings and border crimes happening at the external borders of Europe. What does EUROSUR effectively display on the map and how does it represent migrations?

What the EUROSUR map visualises and represents are neither migration movements nor migrants. The EUROSUR screen displays a map of coloured dots, each of them corresponding to a migratory event; that is say to an irregular border crossing or to a border-crossing crime. It could be argued that EUROSUR structures the form and the meaning of what an event (of concern) is[13]. Nevertheless, more than the dots signifying the single events, what characterises EUROSUR's map are the national coloured borders, whose colours depend on the "level of impact" factor associated with any frontier. It is not the number of migration events that have occurred at a certain border that determines if that frontier will be green (low risk), yellow (medium) or red (high risk) but their "impact". How is the impact factor exactly determined as a combination of multiple migratory events? Policemen who work in National Coordination Centres and manage the system on an operational level caution against the tendency to overstate the use of data evidence for establishing levels of risk: "on an operational level it is important to highlight that levels of risk and the impact factor cannot be deduced from mathematical formula only, and are instead the outcome of a complex political evalu-

[11]"Examining the creation of a European Border Surveillance System", (MEMO/08/086). See also http://eur-lex.europa.eu/legal-content/IT/TXT/?uri=URISERV%3Al14579

[12]In particular, data are taken from: the national databases of the Navy and the Coast Guard, the European Space Agency and Frontex.

[13]In principle any migrant vessel that is detected at sea and that is irregularly entering an EU member state is translated into an "event" and becomes of EUROSUR's concern.

ation[14] which also includes factors like the geographical position of member states and their experience in managing migration" (Interview 2).

In fact, the colour of a frontier is not determined in real-time: it is the outcome of an accumulative process, that is of individual migratory events taking place at that border which are then detected and stored in EUROSUR. When the colour of a frontier changes it is because on a European level, and building on Frontex's risk analysis, "it is established that the border stress that a certain frontier experiences due to the migratory pressures has been considerably increased or decreased". Such a decision is not a smooth process; rather, it is the result of a battle between member states and the EU, insofar as a red border means receiving much more financial support from the European Commission than if the same border is coloured green. This results in member states tending to put on the map as many migratory events of concern as possible, in order to get more financial support. The evaluation made about how to colour a certain frontier depends on the elaboration of past events stored in EUROSUR, combined with a preemptive approach that, starting from the data collected, envisages future scenarios of migratory risk. Hence, the "border impact" exceeds the borderline and includes the political and economic effects related to the governability triggered by the phenomena and by the apprehension of migrants by national authorities. Levels of risk indicators and risk analyses are not conceived for disciplining migration movements but for putting into place measures to enhance border stress capacities.

The use of EUROSUR for producing risk analyses was confirmed to me by Frontex officers at the European Regional Task Force Office (EURTF) in Catania, where Frontex works in coordination with Europol, Easo and Eunavfor Med, for "the management of migration crises in the most affected areas"[15] supporting Italian authorities. "Risk analyses are generated elaborating on the migratory trends that EUROSUR visualises and by paying attention to the alterations at the level of border impact at different frontiers of Europe" (Interview 3). The EUROSUR Analysis Layer User Group is the working group coordinated by the Frontex Risk Analysis Unit (RAU) which is in charge of producing a sort of crisis narrative, that is an updated map of the migratory risk scenarios, on the basis of data entered into EUROSUR. In this regard, it is important to highlight that EUROSUR's visualisation of level of migration risk does actually correspond to the increasing use in EU documents of "hotspot" terminology and images: in fact, hotspots pertain to "risk" levels as

[14] The arrival of X number of migrants in two different member states does not result in the same impact factor. Moreover, the number is not enough for assessing the impact factor: the migrant composition is likewise a crucial element, depending on their degree of manageability of the event.

[15] http://frontex.europa.eu/news/eurtf-office-in-catania-inaugurated-fcQoSr

they represent the critical sites along the EU borders that are characterised by migratory events. Therefore, the visualisation of migration in terms of level of risk contributes to posit a nexus between *border (sites)* and *crisis:* hotspots are named for pointing to the need to intervene in situations of crisis.

The control rooms of EUROSUR and JORA are based on a highly restricted access which generates a closed-circuit visibility: the state gaze on migration – that consists in the modes of visibility employed by states for detecting and controlling migration – is not of public concern. The archival function of the software was stressed by EUROSUR's officers during my visit at the National Coordination Point in Rome: EUROSUR and JORA make it possible to recover what had been detected in a specific location and at a specific time in the past – what is technically called "historical pattern", which refers to the possibility to interrogate the archives of the two mapping-monitoring devices. This is crucial to the functioning of EUROSUR and JORA not only for crafting the "migration crisis" narrative, but also for tracing general migration trends.

By entering the date and the exact location into the computer, the police officer showed me what was detected in the Central Mediterranean, in an area close to South-Eastern Sicily on a day that he took as a sample. Three red dots indicating a migrant illegal crossing appeared on the screen in correspondence to that geographical area. Yet, when I asked him to recover the history of what had happened near the island of Lampedusa on September 6, 2012, he suddenly stopped searching: the date I requested in fact corresponded to the day on which a huge "ghost" migrant shipwreck happened near Lampedusa and there is still a trial underway against the Italian authorities for the failure to assist migrants in distress.[16]

The "story" of any dot contained in EUROSUR is the result of a *close-up gaze* combined with a *sight at distance*: what is displayed on EUROSUR and JORA consists of both what monitoring systems see – e.g. migrant vessels – and what is collected on the ground through interviews conducted with migrants. Therefore, what is displayed on the map is the result of a migratory event as it is visually captured over time – e.g. a migrant vessel detected at sea, then during the rescue operation and finally upon disembarkation. Only some of the data contained in those map-archives stem directly from the same systems or other connected to them, while a part of the information visualised

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16 This is considered a "ghost shipwreck" by Italian authorities: on September 6, 2012, a boat with 135 Tunisian migrants sank a few miles away from Lampedusa. 56 people were rescued, 6 corpses were recovered some days after, and 73 are still missing. The Italian Coast Guard has been accused by NGOs of not answering the SOS calls sent by the migrants and for the delay in going to rescue the migrants. http://palermo.repubblica.it/cronaca/2012/09/09/news/sbarchi_lampedusa-42213505/

is the result of an operation of *knowledge extraction*, that is migrants who are asked to give details about the smuggling network they used and about their journey.

Human security or border vulnerability ?

Differently from JORA, which has not been so much advertised by the EU, EUROSUR has been promoted by the EU as an information exchange system which enhances the possibilities of "saving migrants' lives at sea and fighting cross-border crime"[17]. This ambivalent *humanitarian-police* task has been criticized by activists and scholars who contend that, actually, EUROSUR has not been devised for intervening promptly to rescue migrants at sea (Heller, Jones, 2014). Actually, this 'humanitarian' aim was only inserted into the EUROSUR mandate at a late stage, along with the original goals of preventing cross-border crime (including human smuggling) and irregular migration. These three goals, moreover, amount to much the same thing: 'intercepting' and 'rescuing' migrants at sea" (Andersson, 2016: 12).

Instead of disputing the gap between the rhetoric of EU documents and the effective way in which EUROSUR is operating, I shift the attention to the temporality of visibility. The real-time gaze is in fact the material condition for getting a situational awareness picture of the external borders of Europe. Yet, scrutinizing not only *what* is put in EUROSUR, but also *how long after* a migration event is displayed on the map, it becomes clear that prompt intervention is far from being the goal of EUROSUR. The average time of latency between a migration event being added to the map and being displayed is of some hours and can reach one day. Such a delay depends in part on the technical limits of the system: that is, there is a time required for national Coordination Centers to process data. Moreover, as declared by GMV, the Spanish company that is in charge of improving EUROSUR, there are still difficulties in visualising too many data and too much information at the same time (Interview 4). Nevertheless, the time of latency is also the result of the temporality of intervention that underpins EUROSUR: even if getting a (nearly) real-time situational picture is effectively one of EUROSUR's main tasks, it is not according to real-time temporality that EUROSUR works and impacts on migrations. Indeed, events of concern are added to the map only once they are concluded – for instance, when a group of migrants intercepted and rescued at sea disembark in Italy.

17 http://europa.eu/rapid/press-release_MEMO-13-578_en.htm

EUROSUR keeps the event open to updates instead of crystallising it once and for all: if after some time additional information and data are collected by national authorities about a migration event that has occurred, the dot on the screen corresponding to that event is updated. In the main operational room of the Italian Navy Headquarters in Rome, there is no screen with the EUROSUR map: when I entered the room, a Navy officer explained to me the current situation in the Mediterranean, pointing to the different screens which displayed the position and movements of boats that had been spotted by radar or which showed vessels communicating their own location through the AIS system.[18] One of the screens was displaying instead the images captured by a drone used for monitoring the central Mediterranean: "we always work in real-time, the data we receive from coastal or naval radar are immediately visualised on the map – while this is not the case with satellite images; and it is on the basis of this real-time visualisation that we can also intervene promptly" (Interview 5). To what extent is EUROSUR used by the Navy in its daily activities? EUROSUR is not a piece of software that the Navy employs in search and rescue operations, or for detecting vessels. Rather, the Navy is requested to send to EUROSUR the data collected, although as military actors they can keep some information secret – such as the locations of their own vessels: "we can access EUROSUR, but its usefulness is far more for building an archive that can then be accessed in the future in order to address changes in migration trends, than for monitoring and acting in real-time" (Interview 6).

Hence, the double-edged task of fighting irregular migration and saving migrants' lives appears as radically discordant with the temporality of the effective functioning of EUROSUR that I illustrated above. The goal of saving migrants' lives is increasingly mentioned in Frontex reports, but the way in which human security is conceived remains fundamentally vague. To what extent can migrant lives be saved? "The functioning of monitoring systems like EUROSUR generates an *effect of deterrence*, discouraging migrants from crossing the sea" (Interview 7). Therefore, human security is ultimately conceived in terms of deterrence, that is as measures for preventing migrant departures, and deterring them from coming to Europe to seek asylum. The fact that saving migrant lives is defined through a politics of deterrence – not letting migrants cross the Mediterranean – should be read as part of a broader tendency, I suggest, which is at stake in EU migration governmentality, in particular concerning migrant deaths in the Mediterranean. That is, granting protection to the migrants is equated with preventing them from crossing the sea, without at the same time establishing safe channels to come to Europe.

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[18] The AIS is the Automatic Identification System that is used for tracking vessels at sea in real time. Vessels are obliged to use AIS equipment. This allows authorities to have a real-time picture of maritime traffic.

With the launch of the European Border and Coast Guard (EBCG) in October 2016, saving migrant lives has been explicitly described in Frontex documents in terms of search and rescue operations. In the Regulation of the newborn EBCG, the "technical and operational assistance in the support of search and rescue operations for persons in distress at sea"[19] is listed as part of border management and border security strategies. Notably, the support to search and rescue operations is conceived within the framework of border control at the external frontiers of Europe and "surveillance" is the accepted term used to refer to a de facto much wider array of possible activities"[20] (Carrera, Den Hertog, 2015: 10). More practically, the boundaries between rescuing migrants and intercepting migrant vessels, that is between rescue and capture or containment, are in fact more and more blurred. Rather, the number of migrants rescued and taken to Europe become part of the information and data collected for the "vulnerability assessment"[21] that the European Border Guard and Coast Guard is in charge of conducting regularly, and EUROSUR plays a role as the main archive used for evaluating states' border vulnerability[22].

If we explore the meaning of "risk" that underpins EUROSUR (and JORA) visualisations, we see that it is defined by Frontex through three meanings: "threat, vulnerability and impact", and thus risk in the context of migration monitoring maps is related to the *border stress* that affects a frontier – in the present or potentially. Risk is conceived as potential pressure on the border that is visualised on these maps. Border security itself is defined through risk management: the forms of visualisation produced by EUROSUR and JORA stage spaces that are composed of changeable variables (the migratory events) and that should be managed accordingly, more than presenting migration as a threat in itself and migrants as enemies. Unlike traditional migration maps which depict "migration flows" as arrows pointing to Europe, these systems provide a much more nuanced representation of migration as a phenomenon to be managed by focusing on critical migration hotspots and on migration routes: in the scenarios visualised, the component of future and present potential risk could

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[19] http://frontex.europa.eu/assets/Legal_basis/European_Border_and_Coast_Guard.pdf

[20] The role of EUROSUR fades into the background: the utility of EUROSUR in detecting migrant vessels in distress is only mentioned in passing in Frontex news. It is in fact through national coast radar networks, migrant SOAS calls as well as through radar implemented on the Navy vessels that migrant boats in distress are detected.,

[21] Vulnerability assessments provide information about member states' "capacities and readiness to […] deal with possible large numbers of arrivals of migrants at their borders as well as their contingency plans on border management". https://www.montesquieu-instituut.nl/id/vk83d62wolwe/nieuws/questions_answers_the_new_european?ctx=vjxejzh2cepg&tab=1

[22] https://www.montesquieu-instituut.nl/id/vk83d62wolwe/nieuws/questions_answers_the_new_european?ctx=vjxejzh2cepg&tab=1

never be eradicated once for all and, consequently, requires a versatility in governmental responses. The monitoring activity – *visibility* as the act of sight – is effectively in real-time, while *visualisation* is not; and not even the rationality of intervention that, as I illustrated above, is in fact future-oriented. Relatedly, security is in a way deferred to a near future but grounded on mapping activities conducted in real-time: for setting preventive strategies and responding to future migratory risk, migrations and the changes in the logistics of crossing need to be constantly monitored.

However, it is not in terms of "threat" and of "migrant invasion" that these systems produce and visualise the events on the map, but, rather, on the basis of the degree of governability of every single migratory event. The migrants' presence is translated into abstract dots and lines that have little to do with the materiality of migrant vessels arriving in Europe, nor with the border spectacle produced through the images that circulate in the media. Migration is crafted as a phenomenon to govern in which "the sovereign order is no longer simply that of decision, but also that of imagination" (Aradau, et al. 2008: 152). This means that it is less a question of responding to a specific security-threat than of setting out a space of governmentality that assesses migration impact factors and is simultaneously equipped for tackling migration as a crisis. In this sense, we can speak of a pre-emptive character of future-oriented maps. The spaces of intervention are envisaged building on migration trends grasped through EUROSUR and JORA's archival function and, at the same time, by enforcing states' preparedness in the face of potential but not fully determinable "migration risks". These latter are defined at the level of object (migrants themselves) but cannot be fully calculated in their actual reality (changes in migration routes, future migrant composition). Importantly, migration is assumed as a factor of crisis, that is a structural phenomenon, and not a mere emergency, that however constantly generates new scenarios of risk that are not fully predictable.

The migrant condition that is often associated with clandestinity and invisibility – strategically played out by migrants and generated by migration laws – is at the same time characterised by a pervasive visibilisation of the subjects at different scales – e.g. close up visibility through identification procedures, visibility at distance through monitoring systems. In a way, the paradox of "irregular" migration, forced to constantly move on the sly, consists in the condition of being the hypervisiblised subjects par excellence. That said, the regime of visibility being at stake in migration governmentality cannot be analysed in terms of a disciplinary-panopticon gaze (Tazzioli, Walters, 2016). By disciplinary-panopticon gaze I refer to an operation of constant monitoring, aimed at producing a generalised surveillance and generating "a state of conscious and permanent visibility

that assures the automatic functioning of power" (Foucault, 1995: 129). As the above illustration of EUROSUR and JORA shows, what is generated through these monitoring systems in the Mediterranean is less border surveillance than the visualisation, deferred in time, of migration risk scenarios. Actually, real-time border surveillance is not absent in the activities of JORA and EUROSUR but it is functional to the production of data-archives apt for generating migration risk scenarios.

Although it goes beyond the scope of this paper to investigate the politics of visibility at play in the Mediterranean, it should be noted that the spectrum of visibility that the systems for tracking and archiving migration movements generate is by no means an overall picture of the Mediterranean. This aspect is directly related with the archival and preemptive functions of JORA and EUROSUR's maps. Even if EUROSUR has been promoted as system for generating a situational awareness picture, actually the data and information stored are not used for generating detailed maps representing all migratory events but for visualising quite abstract spaces in which single migration incidents are taken into account or determining the risk level of a certain frontier.

The technical limits of surveillance tools have been explicitly addressed in the EU document proposing the creation of Eurosur (2008)[23]. Most of the time "illegal" migration movements at sea are not detected directly but are discovered as "anomalies"[24] grasped within the normal flow of maritime traffic through the "Anomaly Detection Service", which is based on the use of algorithms and managed by the European Maritime Safety Agency (EMSA)[25]. Yet, beyond technical limits, mapping-monitoring devices are grounded on a highly selective regime of visibility, in terms of what is looked at, as well as for the *desultory time pace* of visibility. What is monitored are only migratory events of concern – "irregular" border crossings and border crime activities – and what is then visualized is a translation of those events into mapping codes according to the level of impact of each of those events. The desultory time pace of mapping depends both on the uneven time of latency before an event is visualized, and on the fact that for a migratory event to occur this has to be detected by monitoring tools – in other words, border crossing movements become "events" only insofar as they are seen and clash with power's eyes.

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[23]"Satellites are useful for monitoring and intelligence gathering with regard to pre-defined areas, but are currently of limited use for tracking" *Examining the creation of a European Border Surveillance System (EUROSUR),* COM 2008 (68) final.

[24]For instance, an anomaly is observed when coastal radar detects a vessel that is not visible in the VMS system (http://ec.europa.eu/fisheries/cfp/control/technologies/vms/index_en.htm). This means that the vessel in question operates without activating GPS function in order to remain invisible.

[25] It is the European Maritime Safety Agency that provides services and technical support to Frontex for detecting anomalies (Interview with EMSA officer, October 17, 2016).

Conclusion:

The *spy, track and archive* functions performed by migration mapping software are put to work by Frontex for generating a "vulnerability assessment" of member states and producing future oriented migration risk scenarios that take migrants less as an eradicable threat than in terms of a constitutive "crisis". Through an analysis of the temporalities of visibility that are at stake in the government of migration at a distance, this article has shown that migration mapping-monitoring software is not conceived for performing border surveillance but for crafting future spaces of governmentality. As Julien Jeandesbodz has argued, EUROSUR has contributed to relevant shifts in the way in which border security is conceived, both at the level of the space "where controls occur", and because it tries to "anticipate both geographically and temporally on border crossings, by categorising circulations according to their degree of 'risk'" (Jeandesbodz, 2011: 4). Thus, border controls and national sovereignty part ways (Basaran, 2008; Mezzadra, Neilson, 2013) while the function of control itself *scatters across space and time*. In a related way, not only are techniques of control "much less visible than police working on the front lines of border control" (Bigo, 2008: 21); rather, control turns out to be recast in terms of the crafting of spaces of governmentality envisaged from the combination of the archival function – which stores and elaborates on migration trends – and of a preemptive temporality of security. Ultimately, even more than a question of border displacement beyond the geopolitical frontier-lines, these migration monitoring-mapping systems are less concerned with securing borders (border surveillance) or with generating new borders beyond the national ones, than with producing spaces and crafting scenarios of risk.

How does such a *track-and-archive* gaze bear on migrants? What are the effects that these kinds of mapping software generate on migrant lives? EUROSUR and JORA function at a certain level of secrecy; they are therefore unknown to the migrants. As a consequence, despite the fact that the EUROSUR and JORA officers claim to be aiming at a deterrence effect, therefore discouraging the migrants' engagement in the crossing, the migrants are rarely aware of the existence of this mapping software. In fact, as this article has shown, the *track-and-archive* gaze, which strives to detect migrants in real time, does not intervene on the spot – by blocking or saving migrants – and is instead predicated upon a deferred temporality of security. Migrants' chances of crossing the Mediterranean and reaching Europe are more or less higher depending on being spotted by the multiplicity of technological eyes that watch the Mediterranean – such as radar and satellites. *Being seen* can mean being pushed back on the high sea, or being saved and ferried to Europe, or being rescued and taken back to Libya. The potential traps of rescue operations correspond to the constitutive reversib-

ility of visiblity, as a battlefield migrants strategically engage with, trying to dodge controls and remain invisible or calling instead national authorities in order to be rescued. As the Italian Coast Guard reveals, the tactical choices that migrants engage with, either trying to be detected in order to be rescued or crossing the Mediterranean on the sly, also depend on a temporal dimension: if migrants send out an SOS call too early, that is while they are still in Libyan waters, they are rescued by the Libyan Coast Guard and taken back to Libya. Thus, the temporality of security is strategically played out by migrants themselves, well beyond the punctual moment of the rescue and the binary opposition between being seen or not being detected. Nevertheless, the possibilities for migrants to strategically appropriate and twist the real-time visibility produced by technological eyes as well as the role of monitoring devices should not be overstated. The unprecedented number of shipwrecks, due also to states' failure to assist migrants in distress, and the push-back operations at sea made by the Libyan Coast Guard that return migrants to Libya as a result of the most recent agreements with Italy, highlight that migrants are not in a mere face-to-face relationship with security devices that try to spy on them. Forms of administrative violence, political and legal struggles over the duty of rescue, bilateral state agreements to hamper migrants from crossing, and monitoring technologies shape the Mediterranean Sea as a space of fractured governmentality: far from being a natural deadly frontier, it is laboriously produced as a space of migration containment.

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Interview 2: Interview with the Director of the Italian National Coordination point of Eurosur, November, 2015, Rome.

Interview 3: Interview with the Coordinator of EURTF in Catania, 21 November 2016.

Interview 4: Interview with GMV's officer, September 15, 2016. About GMV's activities for developing EUROSUR: http://www.gmv.com/en.

Interview 5: Interview with police officer working at EUROSUR at the National Coordination Point in Rome

Interview 6: Interview with the Italian Navy at the Headquarters of Rome, July 2015.

Interview 7: Interview held at EUROSUR National Coordination Point in Rome, November 2014.

Software managed by Frontex	Data validation	Data stored	Screen	Access mode	Who can access?
EUROSUR	National level	Frontex Joint Operations only	One screen	One level of access only.	Home Office of the states involved+ Frontex
JORA	Centralised system (Frontex Warsaw)	All border crimes and irregular border crossings at the external frontiers of Europe	Multiple layers (5).	Possibility of partial access to the system	Actors involved in Frontex Joint Operations + partial access for other actors (e.g. the Navy)