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Effects of drone technology in the context of migration on migrants on route to Europe:

A qualitative content analysis of existing scientific literature

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Abstract:
Since 2015, more than 20,000 migrants have lost their lives, trying to cross the Mediterranean Sea in hopes of a better life. The European Union is torn over this humanitarian crisis as member states have repeatedly failed to come to a common solution. The deployment of drones over the Mediterranean to help migrants has been discussed and criticized by many especially within the scientific literature.

Using a systematic literature review, this thesis seeks to understand the complex impact that drones have on migrants crossing the Mediterranean. For this purpose, a dataset of scientific articles has been compiled and analyzed with an inductively created set of codes. Additionally, an interview has been conducted with an expert to gain further insight into the impacts of drones on migrants in the Mediterranean.

The analysis showed that drones are primarily used to prevent migrants from reaching European Borders. Rather than helping migrants to safely reach European shores, drones have created an even more dangerous situation at sea, at the expense of human lives of those still daring to attempt seeking a better life in Europe.

Table of contents

1. Introduction 1
   1.1. Aerial Surveillance set against the Historical Context of European Border Management 1
2. Conceptual framework 3
   2.1. Legal Framework 6
3. Methods 7
4. Analysis 10
   4.1. Textual Analysis 10
      4.1.1. Search and Rescue 10
      4.1.2. Responsibility 11
      4.1.3. Multipurpose 12
      4.1.4. Externalization 13
      4.1.5. Data Sharing 14
      4.1.6. Pullbacks 15
      4.1.7. Human rights violations by third countries 16
      4.1.8. Securitization 17
      4.1.9. Technological Solutionism 19
      4.1.10. Militarization 19
      4.1.11. Deterrence 20
      4.1.12. Moderation 21
      4.1.13. Power asymmetry 22
      4.1.14. Dehumanization 22
      4.1.15. Normalization 23
      4.1.16. Solutions 24
   4.2. Interview 25
   4.3. Discussion 26
   4.3.1. Sub-Research Question 1 26
   4.3.2. Sub-Research Question 2 27
   4.3.3. Sub-Research Question 3 28
   4.3.4. Sub-Research Question 4 29
5. Conclusion 30
6. Reference List 31
7. Appendix 35
   7.1. Appendix A: Dataset 35
   7.2. Appendix B: Coding Table 36
   7.3. Appendix C: ATLAS.ti Analysis 40

7.4. Appendix E: Ethical Approval .....**Fehler! Textmarke nicht definiert.**
7.5. Appendix D: Interview Transcript.....**Fehler! Textmarke nicht definiert.**

1. Introduction

The European Agency FRONTEX was founded in 2004 and tasked with assisting the European member states and members of the Schengen-Area to protect their outer borders, a duty which is crucial to the European project for enabling free movement within Schengen Area and Europe itself. One of the actions it has taken alongside Southern European member states like Greece and Malta is to use aerial surveillance of migration via drones with its use of the Israeli HERON drone for example, which was purchased by FRONTEX and is stationed in Malta, or the use of drones off the coast of Greece (Ahmed & Tondo, 2021; Israel Aerospace Industries, 2023). This decision has been heavily criticized as it is often seen as yet another EU policy that is designed to keep migrants from reaching the EU. The salience of this critique became clear with the start of the 2015 'migration-crisis', when European member states struggled to create a joint solution for the increasing number of refugees fleeing war, violence and extreme poverty who tried to enter the EU outer borders (Kriesi, Altiparmakis, Bojar, & Oana, 2021).

However, the use of aerial surveillance comes as no surprise given the development of the European migration policy which is increasingly pivoting towards securing borders rather than welcoming migrants.

1.1. Aerial Surveillance set against the Historical Context of European Border Management

Since World War II, three stages of migration to and within Europe can be distinguished (van Mol & Valk, 2016). From the early 1950s up until the oil crisis in 1973, Europe was experiencing steady economic growth causing an influx of guest workers, with often little regard for their integration outside of the labor market (Brinkmann & Sauer, 2016; van Mol & Valk, 2016). The second stage, from the economic crisis caused by the oil embargo up until the fall of the Iron Curtain, governments of the Northwestern European countries especially started to restrict migration heavily. From the late 1980s and early 1990s during the Kosovo War until today, migration from third countries into the EU has grown. At the same time mobility within the EU was more and more encouraged, with the Syrian civil war and ensuing refugee crisis marking the height of migration towards Europe (van Mol & Valk, 2016).

Due to the EU's increasingly inhumane treatment of migrants and its isolationist migration policies, the term 'Fortress Europe' has been used repeatedly in the past ten years to describe the EU's current course of shutting out migrants of its outer borders (Widom, 2023).

Border control in Europe is part of the area of freedom, security and justice, a policy area in which the EU has shared legislative competence with its member states. With the introduction of the Schengen Area, 27 European countries both in and outside of the EU, agreed to abolish their mutual borders for the sake of free movement of citizens, goods and services (Buonanno, 2021). Consequently, after opening its inner borders, the security of its outer frontiers became greatly important for the EU. Among such policies as the creation of FRONTEX and agreements with third countries to keep irregular migrants from reaching its border, the EU made use of smart borders and digital technology in order to control its borders (Jeandesboz, 2016).

The responsibilities towards accepting refugees and examining their asylum claim are stated in the Dublin III regulation, which came into force in July 2013. The agreement has been criticized, because it strictly places the obligation to process refugees with the very country in which they are first registered (Migration and Home Affairs, 2023). As a result, the southern European countries are struggling unproportionally to deal with the immense influx of refugees from 2015 onwards as the member states have yet to come to a new agreement (Migration and Home Affairs, 2023; UNHCR, 2023).

The EU tried several times to negotiate a joint agreement on refugee distribution but has yet to come to an agreement with its member states. Following the failure to come to such a joint agreement the EU refocused its effort from managing migration flows within its territory to stopping them before they reach its outer borders (Kriesi et al., 2021). This has been evident by policies such as the EU-Turkey deal or Italy's support and the EU cooperation with the so-called Libyan coast guard (LYCG). Aerial surveillance with drones is an important tool in this approach (Kriesi et al., 2021; Martins & Jumbert, 2022)

On the surface, the usage of drones seems like an appropriate tool to locate migrants in need of rescue at sea. However, the use of drones to manage and control migration has been heavily discussed and criticized. Human Rights Watch, an NGO, recently published an article investigating FRONTEX's use of its Heron drone which is stationed in Malta (Sunderland & Pezzani, 2022). It provides evidence that the information gathered by the drone was used to facilitate an apparently illegal pullback by sharing the location of refugees in international waters that were detected by the drone with the so-called Libyan coast guard.

Scientific literature on drone use in migration management provides evidence that can inform policy. However, while there is literature on this topic, the focus, the themes, and the analytical approaches used vary considerably. There is a need to systematically unpack what knowledge has already been produced in order to bring to light the gaps in this knowledge as well as the trends within the field, especially given the complexity of European policy making, intergovernmental cooperation and third country agreements. Therefore, this paper aims to uncover:

> *'What are the implications of the use of surveillance drones in the context of migration to Europe via the Mediterranean Sea for irregular migrants?*

To assess the effects of drones I look at the scientific discussion surrounding them, guided by the following sub-research questions:

(1) How are irregular migrants affected by drone surveillance on their trajectory to Europe?
(2) How can we understand human rights in the era of seamless borders and drone surveillance?
(3) How does the use of drones affect the human rights and data justice of migrants?
(4) What solutions does the literature offer for human rights violations related to the usage of drones?

2. Conceptual framework

Nowadays drones are increasingly used globally in border control. However, this thesis will focus exclusively on their usage and effects in the Mediterranean Sea due to the ever-growing death toll in the Mediterranean Sea which was recently estimated above 20,000 migrants since 2014 by the International Organization for Migration, and the EUs path to further migration-prove the 'Fortress Europe' (IOM, 2023).

While there are drones used by non-governmental organizations (NGOs) as well, unless specified otherwise, the discussion within this thesis will primarily be on government and EU drones. As Topak (2019) argued, the use of drones by NGOs in the Mediterranean can

broadly be separated into two categories: Humanitarian surveillance and Human Rights Surveillance. Human rights surveillance, such as conducted by Sea Watch, is not focused on surveilling migrants but on surveilling law enforcement and their interactions with migrants fleeing via the Mediterranean. Humanitarian surveillance on the other hand is the search for and surveillance of migrants in order to conduct or assist in search and rescue operations. While this surveillance is focused on migrants and not conducted via governmental drone technology, it has effectively been turned into a proxy for governmental surveillance. NGOs who operate in the Mediterranean have been pressured by the government of Italy, and by extension the EU, to sign the code of conduct for maritime NGOs. This code of conduct forces NGOs to cooperate with law enforcement, for example by letting officers bord their vessel or by having to share their data gathered by its drones. It could thus be argued that NGO drone usage aimed at migrants has effectively been co-opted by governmental agencies and while other NGO drone usage is only indirectly relevant for the answering of my research questions. In this thesis, NGO drones usage will therefore mostly be examined under the same scope as governmental usage of drones in the Mediterranean (Cusumano, 2019; Topak, 2019).

European migration management is the key component of free movement of goods and people within the European Union and the Schengen Area. In order to achieve its goal to create open borders and free movement for 'desirable migrants' while keeping out 'unwanted migrants', the EU created a border system that is not hermetically sealed but instead distinguishes between these groups (Broeders, 2007; Broeders & Hampshire, 2013).

Modern information and communication technology (ICTs) are a cornerstone of these seamless borders. The use of digital tools allows governments to categorize and identify migrants even before they reach the border and create black lists, grey lists, and green-lists of migrants accordingly and create seemingly seamless borders (Broeders & Hampshire, 2013).

Large scale extensive data bases of migrants and refugees were created such as the Schengen Information System (SIS), the Visa Information System (VIS) or EURODAC. These databases stored to personal data such as name and age, and also biometric data (Broeders, 2007; Jeandesboz, 2016).

Especially the storage of biometric data allows the EU and its member states to identify and expel even migrant that have even successfully reached and overcome Europe's outer borders (Broeders, 2007).

The introduction of drones into the EUs border system is another digital technology added to make the management of the European outer border more efficient. Just like regular airplanes, drones extend the reach of migration management beyond actual physical borders. Since

drones can remain airborne longer than planes and can be configured to carry high-tech equipment such as infrared-cameras or high-quality video feeds that can be live-streamed globally via a ground station and do not need to be manned, they offer clear operational and financial advantages compared to regular planes. But the main argument for the introduction of drones was their prowess to detect migrant vessels in the Mediterranean and thereby to combat smuggling networks and to facilitate and improve the efficiency of search and rescue operations of these often inadequate and overloaded vessels, and to curb the rising death toll connected to these migration attempts (Ahmed & Tondo, 2021; Csernatoni, 2018). But as previously mentioned the usage of drones has faced significant critique because of their role in facilitating pull- or pushback operations, an illegal practice violating the non-refoulment rights of migrants. The introduction of military technology into the civilian realm represents the increasing militarization of migration management and its role in the securitization and criminalization of irregular migration, etc. (Koslowski & Schulzke, 2018; Marin & Krajčíková, 2015; Topak, 2019)

With the increasing reliance on ICTs by the European border control agencies and the data they provide, mobility within and towards the EU has become ever more datafied. Biometric characteristics, nationality, visa history; all the data available on a person is used to categorize and sort people, at times even before they ever reach a border. Border agencies then proceed to interact with travellers and migrants according to their categorization. This disconnect between border agents and especially the migrant which is intensified by the use of drone technology and a border policy that is designed to prevent irregular or 'Blacklisted' migrants from reaching a hard border in the first place, dehumanizes both the border control in the sense that it relies increasingly on technology rather than border personal, as well as migrants, who become datafied before they even reach a border (Broeders & Dijstelbloem, 2016).

This development is a strong example of how the datafication of society can lead to the entrenchment or introduction of inequalities and discrimination, of exclusion, and the dehumanisation of the decision making process (Dencik, Hintz, Redden, & Treré, 2019).
Data justice is especially relevant when it comes to the EU's border management, its increasing technologization, and the influence that ICTs and the data they gather have on the decision-making process in border management.
While still a rather young field of research, data justice is nuanced and wide spanning, as datafication is affecting our society on a social, economic political and cultural level of issues

and addresses the question of how social justice can be applied in a datafied world. It is concerned with the ethical use of data, especially in connection to marginalized groups (Broeders & Dijstelbloem, 2016; Taylor, 2017). As migrants regularly form an intersection of multiple marginalized communities at once, such as persons of color, displaced people, religious minorities, disabled persons, people prosecuted for their sexuality identity, etc.-, they are an especially vulnerable group.
Data justice can be understood as social justice in the context of datafication and societal implications of data-driven technologies, such as drones (Dencik et al., 2019).

2.1. Legal Framework

The laws affecting refugees fleeing on the sea are a mixture of multiple international treaties and conventions that also translate into national law. The United Nations Convention on the Law of the Sea (UNCLOS) determines the rights and duties of states and grants states sovereignty over their territorial waters and their exclusive economic zones. But it also compels them to grant freedom of navigation to any vessel in exclusive economic zones or high seas and to establish laws requiring the rendering of assistance to any vessel in distress and the promotion (Klein, 2021).

Under the International Convention for Safety of Life at Sea (SOLAS Convention) and the International Convention on Maritime Search and Rescue (SAR Convention) states are responsible for the rescue of vessels or persons in distress while on sea within an established Search and Rescue region or SAR Zone. Furthermore, states are bound by the Human Rights and the Refugee Conventions. According to the UN Human Rights Committee, a state is still required to adhere to its human rights obligations when conducting a rescue operation both in territorial and international waters, which includes the prohibitions on torture or other cruel, inhuman or degrading treatment as well as collective expulsions (Klein, 2021).

Lastely, as stated in Artcile 33 (1) of the Refugee Convention, states are forbidden from returning or expelling migrants if their lives or freedoms would be at risk due to race, religion, political opinion, etc. (Bundeszentrale für politische Bildung, 2021; Klein, 2021). This principle preventing the endangerment of migrants is generally referred to the ‘Non-Refoulment’ principle and was reconfirmed in a historical court ruling by the European Court of Human Rights in 2012 which saw the state of Italy guilty of violating the non-refoulment principle by returning 24 Somali and Eritrean Refugees to their point of departure in Libya

where refuges face significant threat of torture and other mistreatment to this day (Amnesty International, 2012; Amnesty International, 2021; Urbina, 2021).

3. Methods

The focus of this thesis is the effect of drones on irregular migrants as discussed in the available scientific literature and of what it entails. In the past, case studies, analyses on legal frameworks and content analyses have been used to examine this topic. This thesis, in contrast, employs a qualitative content analysis after Maying on this topic in order to answer main research questions and its sub questions.

Mayring's content analysis approach offers a very transparent analysis due to the systematic nature of its structure. Additionally, it is easily reproducible because of its transparency and systematic character (Mayring, 2022).

Maying's qualitative content analysis follows five distinct steps (Mayring, 2022; Pfeiffer, 2018):

The first step is the selection of material. I have chosen scientific articles as my aim is to discover trends within the scientific literature: The textual data on which this analysis is based are scientific publications found in relevant databases. The decision to strictly analyze scientific literature was made because it is a logical step considering the research question of this paper, which does not only seek to discover what the general implications of the use of drones for migrants are, but instead seeks to assess and analyze the scientific debate surrounding this issue. Furthermore, the quality of peer-reviewed scientific publications makes for a more reliable dataset and therefore a more constructive analysis.

In order to find relevant articles a keyword search was conducted on both SCOPUS and Web of Science. These databases were chosen due to their academic nature and the fact that as a student at the University of Twente I have full access to both databases via the university online library. The decision to include both data bases was made to find as many relevant articles as possible. The keywords used in the keyword search were 'drone AND migration AND surveillance'.

To determine whether the articles found by the keyword search were actually relevant to the research question, that being if they addressed the usage of drones in the context of migration to Europe in any way, the articles abstracts and introductions were read thoroughly. The

articles were included if they discussed drones, unmanned aerial vehicles or any other term to describe remotely piloted unmanned aerial surveillance technology and if this discussion focused at least in part on their operation in the context of migration to Europe. The only exception was the article by Milivojevic (2015). While she compared drone border surveillance in Serbia and Australia, she included a lot of relevant information on drone surveillance in the Mediterranean even though she wrote it at a time when large scale border surveillance by drones has not been realized by the EU.

After applying these filters, the search produced 10 relevant articles that will make up this thesis' dataset.

These articles stem from a variety of journals including the Journal of Ethnics and Migration Studies, Marine Policy, International Studies Perspectives, European Security, etc. Furthermore, these articles were all published within a 7-year period from 2013 to 2022 with most articles, four, being published in 2022.

Secondly, the direction of the analysis has to be determined. The subject of this paper's analysis will be the impact of drone usage on migrants.

The next step is to determine the form of analysis. Roughly speaking, in Mayring's model the analysis can be explanatory, structural, or summarizing. This paper will conduct a summarizing analysis as it is neither trying to explain every single implication for refuges, since this would go far beyond the scope of a manageable bachelor thesis, nor is it trying to break down the articles and analyze their structure.

The fourth step is the analysis of the dataset and its interpretation. In order to identify and catalogue the recurring elements in the dataset relevant to the research questions, a code book was developed based on a subset of articles from the original dataset. The three articles, Csernatoni (2018), Koslowski & Schulzke (2018) and Marin & Krajčíková (2015), were thoroughly examined to find passages relevant for the answering of the research questions. Based on this exercise, 14 codes were developed that could be applied to the rest of the dataset. This approach was done in part since it limited the time spent on building up codes and freed up more of my resources for the actual analysis. In order to cover ideas and notions that may not have been discussed in the subset used for the creation of the codebook, codes were added during the analysis where such cases were encountered. This mixed method coding approach produced a codebook of 16 codes.

While most codes are self-explanatory, like ‘Third country human rights violations’, some are more complicated and should therefore be explained in detail:

‘Securitization’ as a code is based on the theory of securitization. Multiple scholars represented in the dataset have applied this theory in their articles. The theory of securitization was developed by scholars of the Copenhagen school, who effectively broadened the range of traditional security analysis beyond military or diplomatic scope to include a wider understanding of societal security to include topics such as migration. Securitization theory seeks to understand how societal issues come to be perceived as a security issue. Migration for example, can be seen as a factor of societal security, suggesting that a huge influx of migrants may threaten the societal fabric and economic, political, or social institutions (Koslowski & Schulzke, 2018; Marin & Krajčíková, 2015).

The concept of ‘Techno-Solutionism’ encompasses applying a technological ‘fix’ to societal problems that are long-term and structural in nature. The code ‘Technological solutionism’ is therefore based on this concept (Morozov, 2013).

After some problems with university licenses for the analysis software, ATALS.ti was chosen as the tool to conduct this textual analysis due to its intuitive design, availability and its obvious advantages over an analysis conducted by hand.

Lastly, the quality of the analysis has to be discussed. That entails to ascertain that the analysis process was transparent enough, that it was conducted objectively, and it could reliably be repeated to ensure reproducibility.

While Mayrings approach is a good fit to answer the research question of this paper, it does come with its own limitations. As it is the case for all context analyses there has to be awareness to the fact that textual data is subjective, which means that it can be misinterpreted; also, that textual data is dependent on its context, which can also lead to misinterpretations of data (Given, 2008). However, due to the fact that Mayring’s analysis scheme is very transparent such misinterpretations can be discovered quickly by the circle supervisor or any other reader (Mayring, 2022). Moreover, due to the limitations in both time and expertise of the student, a systematic process like the one Mayring developed is advantageous.

After a large part of the analysis has already been concluded, I have had the opportunity to additionally conduct an interview with Dr. Bruno Oliveira Martins, a senior researcher at the Peace Research Institute Oslo (PRIO), who researches security technologies and practices and their societal impact. During this interview he answered a catalogue of questions, and we

subsequently discussed some of my impressions gathered during the analysis of the textual data. The insights have in part confirmed my findings and offered additional input that has been worked into the discussion and conclusion. The questions asked were directly related to my sub-research questions:

Q1: How have smart borders changed migration management in Europe and how do drones factor into this system?

Q2: What is your opinion on the validity of drones for search and rescue operations, especially operations conducted by FRONTEX and other governmental agencies?

Q3: What is your opinion on the impact that drones have on data justice for migrants?

Q:4 Are there any solutions to how drones are currently used that you would consider viable?

4. Analysis

The analysis will first discuss the codes that were used and their distribution in the text corpus. Following this, the key points from the interview will be discussed. Afterwards the results of the analysis will be discussed, and the sub-research questions answered accordingly.

4.1. Textual Analysis

The 10 articles which the dataset is comprised of span publication dates from 2015 to 2022 with Articles being published in 2015, 2018, 2019, 2021 and 2022. In total, 357 quotes were coded with the average code being used 22 times. If a code was applied more than average, it will be mentioned in its discussion as those can be identified as 'trends' in the literature.

4.1.1. Search and Rescue

The code that could be applied the most was '**Search&Rescue'**, with 48 hits in total and 9 out of 10 articles. The code was applied when there were references found to the capacity and/or usage of drones for search and rescue operations in the Mediterranean within the text. As the code is described in a neutral way, both references that highlight the effectiveness of drones for search and rescue operations, and references that critique them have been coded. While some articles still highlight the mostly technical positive factors for drone usage in search and rescue operation (Koslowski & Schulzke, 2018; Loukinas, 2022), most articles question the benefits that drones truly bring to humanitarian operations (Glouftsios & Loukinas, 2022; Martins & Jumbert, 2022; Milivojevic, 2015; Molnar, 2022; Topak, 2019). The claim of their

value in the context of search and rescue was brought forward by the manufacturers but also by FRONTEX and the European Commission, who highlighted the drone's ability to detect and identify migrant vessels unfit for crossing the Mediterranean and could thus proactively direct humanitarian relief. (Csernatoni, 2018; Loukinas, 2022).

In the analyzed articles however, there is a consensus that while these arguments technically have merit, the reality is that they are used to justify the acquisition of drones to increase the EU's border surveillance capacities (Martins & Jumbert, 2022). The reason why the EU argues the potential of drones for humanitarian purposes is simple: it is hard to argue against it. On paper, drones can patrol areas in which migrant vessels have previously sunk, capsized or become endangered in other ways. As discussed in the introduction, the advanced technological features of drones allow them to operate during nighttime and in weather conditions that restrict visibility. Even humanitarian NGOs dedicated to saving lives in the Mediterranean like Médecins Sans Frontières or the 'Migrant Offshore Aid Station' are using drones (Topak, 2019). Given the rising death toll in the Mediterranean of migrants trying desperately to cross the sea, no one would argue against a policy that could so effectively help to facilitate humanitarian assistance. However, the key word here is 'could'. There is evidence of recent cases of migrants drowning in the Mediterranean by the hundreds despite authorities knowing of the vessel's trajectory and its precarious state hours before its sinking, and the majority of articles within my dataset show that the issue is not a lack of knowledge of the migrant vessel's location when crossing the Mediterranean, but the apparent and deliberate inaction of the EU, FRONTEX and southern EU member states which is the reason for the often late and inefficient humanitarian response to distress at sea (Beake, 2023; Kampf, Ludwig, & Prado, 2023; Martins & Jumbert, 2022).).

Codes which also relate to the humanitarian situation in the Mediterranean and the inaction on the European side towards it are 'Responsibility', 'Externalization', and 'Multipurpose'.

4.1.2. Responsibility

'**Responsibility**' has been coded time 18 across 6 out of 10 articles, but none of the authors in this dataset interpret the effect of drones on responsibility and vice versa as positive.

Klein (2021) points out that the responsibility to save lives at sea, which is rooted in the UNCLOS and SAR Convention, is not met by only gathering information about a case of distress at sea. Drones on their own are therefore not enough; they pose no ability to meaningfully help people in distress. However, precisely this circumstance is why drones are used to gather intelligence on cases of acute or potential distress at sea. By common

interpretation of both the UNCLOS and SAR convention, drones are not required to provide assistance, as this would normally be the responsibility of a master of ship. This deliberate detachment from immediate responsibility has also been discussed by Topak, who connects this circumstance to the facilitation of illegal pullbacks in corporation with third countries such as Libya, which will be discussed later on (Klein, 2021; Topak, 2019). But even if the information gathered on a case of distress is shared immediately, increasingly securitized laws on immigration and human smuggling, that at times even violate human rights, cause a fragmented interpretation of responsibility which can lead to further inaction as European and member states agencies are apparently unwilling to act if they are not compelled to do so (Klein, 2021).

In 2015, arguing similar to Topak, Milivojeciv already criticized the growing trend of pushing responsibility onto third countries, often of the global south, using the advanced situational awareness provided in part by drones over migrant vessel position and trajectories before they enter European SAR zones (Milivojevic, 2015). In the same year, Marin and Krajčíková highlighted that FRONTEX repeatedly stressed that the organization was not responsible for humanitarian or search and rescue operations in the Mediterranean, despite lobbying for drones of their own with the argument of advantages for exactly that type of operation (Milivojevic, 2015)

Other authors have argued that the lack of internal and external accountability of border police, especially FRONTEX, was further exacerbating the trend of ignoring responsibilities to aid or that those agencies flat out deny the existence of cases of distress. This, they argue culminates in the left-to-die practice in which no one comes to help migrant vessels in distress, and those unfortunate enough to be on bord are literally left out at sea to die despite knowledge of their distress (Topak, 2019).

The intentional disregard by EU and other governmental agencies for their responsibility to help migrants in distress is juxtaposed by the line of arguments that drones will enable FRONTEX and the southern member states to better provide aid to those in need at sea (Glouftsios & Loukinas, 2022).

4.1.3. Multipurpose

The code '**Multipurpose**' is relevant for this development. In the coded paragraphs, the authors highlight the multipurpose character of drones by pointing out their uses for both

border surveillance and SAR missions, while Loukinas, Koslowksi and Schulzke, and Molar specifically stress that it depends of the user of the drone, whether a drone is utilized against migrants or to support them in cases of distress (Koslowski & Schulzke, 2018; Loukinas, 2022; Molnar, 2022).

In combination with the fact that FRONTEX and the southern EU member states have already demonstrated an unwillingness to utilize and act upon the humanitarian advantages that drones bring in the past, it reinforces the theory that the humanitarian advantages of multipurpose drones is merely exploited to argue for the development of border surveillance for the sake of border control (Loukinas, 2022).

Csernatoni (2018) additionally highlights a different multipurpose of drone: that of civilian and military purpose. This kind of multipurpose however has to be discussed in the context of militarization of border surveillance which will be done later in this analysis.

4.1.4. Externalization

The code '**Externalization**' could be applied in all but one article to a total of 31 times and describes the externalization or widening of the EU outer borders.

Using drones and operating them in international waters, and at times even in territorial waters of third countries, gives the EU advanced knowledge and intelligence on boats carrying irregular migrants long before they cross into European waters or any European border (Glouftsios & Loukinas, 2022; Koslowski & Schulzke, 2018; Loukinas, 2022; Marin & Krajčíková, 2015; Milivojevic, 2015). This advanced knowledge is used to inform a preventative border control policy that is designed to intercept vessels before they enter European waters or even leave the territorial waters of third countries, rather than conduct humanitarian operations (Csernatoni, 2018; Glouftsios & Loukinas, 2022; Koslowski & Schulzke, 2018; Marin & Krajčíková, 2015). The usage of drones in international waters for surveillance purposes is in fact easier to conduct for FRONTEX as it would be in European water, for the agency has to ask permission in order to operate a drone in the sovereign territory of a EU member state while there are no such constrains for their usage in international waters (Glouftsios & Loukinas, 2022).

However, as Marin and Krajčíková mention in their 2015 paper and as the ECHR confirmed with the Hiris-Ruling, both the Schengen Border Code and the obligation to protect the

fundamental rights of migrants still applies in international waters (Marin & Krajčíková, 2015).

For this reason, the EU border control apparatus relies heavily on third countries. In part equipped, trained and financed by the EU or EU member states and acting on the EU's intelligence gathered by drones, third country authorities intercept migrant vessels before they can leave their territorial waters, preventing them from reaching international waters and EU territorial waters. (Glouftsios & Loukinas, 2022; Topak, 2019). While this practice in itself is highly controversial, these third countries agencies even go so far as intercepting migrant vessels in international waters which constitutes a 'pullback', an illegal practice which has been coded and will be discussed later.

Interestingly, Italy's newly created code of conduct for NGOs can also be characterized as an externalization via drones, as this code forces NGOs to cooperate with EU authorities and to share their data, including that gathered by drones. As these NGOs operate all over the Mediterranean, it essentially gives the EU authorities another source of information on migrants before they even reach European territorial waters (Topak, 2019).

The literature shows two important aspects of EU border control externalization in the Mediterranean: the widening of the EUs situational awareness through drones' surveillance into international and even territorial waters of third countries, and the EUs and southern Member states cooperation with third countries to enforce this externalization, such as Libya or Turkey. The literature criticizes this externalization for its preventative nature, its incorporation of push and pullbacks and the sharing of drone gathered data with third countries as the cornerstone of this practice (Glouftsios & Loukinas, 2022).

4.1.5. Data Sharing

The aspect of '**Data sharing**' was coded as: 'References to the sharing of data generated by drones with actors outside the EU' and was found in 7 of the 10 articles for a total 27 references.

While it is technically legal to share data with third countries, this cooperation is heavily criticized by the authors represented in this dataset. They argue that it is linked to illegal pullbacks in the Mediterranean and human right abuses in cooperating third countries (Csernatoni, 2018; Glouftsios & Loukinas, 2022; Klein, 2021; Loukinas, 2022; Marin & Krajčíková, 2015; Martins & Jumbert, 2022; Molnar, 2022; Topak, 2019). Italy's

corporation with the 'Libyan Coast Guard' is currently investigated by the ECHR as it is alleged that the state was complicit in human rights abuses by supplying Libya with intel on migration flows and equipment to intercept migrants before they reach Europe (Klein, 2021). This case will later be discussed in combination with the codes 'Pullback' and 'Third Country Violation'.

Another aspect of the EUs data sharing cooperation with third countries is the fact that such cooperation can be difficult to prove as FRONTEX is regarded as a notoriously intransparent agency. And drones are both quiet and hard to spot. This deniability adds to the difficulty in proving involvement in illegal pullback operations in international waters (Glouftsios & Loukinas, 2022; Topak, 2019).

From a data justice perspective, the sharing of data is considered harmful when the data is gathered without the permission of the data subject, and when the data contains sensitive information. While migrants in the Mediterranean can hardly object to being surveilled, the information that is gathered by drones is not personal in nature. The EU border security apparatus has a need for both specific, or 'bottom layer' knowledge, such as nationality, eye color or fingerprints of an individual, as well as more general data, or a 'top layer' to discover trends and track vessels. The data gathered by drones falls within the 'top layer' knowledge and is thus not as relevant from a data justice perspective (Martins & Jumbert, 2022).

The generation, sharing, and handling of data within the European member states is strongly regulated by the EU in the GDPR (General Data Protection Regulation, 2022). For this reason, data can only be gathered for a specific purpose and only to a justifiable level specificity, for example the number of passengers of a migrant vessel and its trajectory for reasons of border control. Sharing it with third countries, however, is questionable, because data protection legislation does not apply. This can be circumvented as the SAR Convention calls for a cooperation and exchange of information between states in the matter of search and rescue coordination (Klein, 2021). Even tough, this can be seen critically however, as it has already been established that the cooperation between the EU, member states and third countries is designed to prevent migrants from reaching the EU and not to conduct SAR operations.

4.1.6. Pullbacks

To find and categorize all mentions of both Pullbacks and Pushbacks, 'References to the practices of both pushbacks and pullbacks facilitated with the involvement of drones' were coded as **'Pullbacks'**. This code was applied 23 times across 7 out of 10 articles.

As previously mentioned in the historical context section but repeated by Marin and Krajčíková (2015) the initial modus operandi of southern EU Member states like Italy were pushbacks. This term means to intercept migrants in international waters and to return them to their port of embarkation. Due to the human rights violations facing migrants pushed back to Libya, Italy has been found guilty of violation the right to non-refoulment in the Hirsi case. Now aware of the consequence of their extra territorial operations, the Italian government switched to cooperating increasingly with third countries in order to circumvent the Hirsi Ruling while simultaneously 'keeping their hands clean'. Similar practices have developed all over the Mediterranean (Marin & Krajčíková, 2015; Molnar, 2022; Topak, 2019). As discussed previously, these pullback operations are supported by intelligence generated by drones, which are designed to be difficult to spot. It is very likely that this is an argument for drones in the eyes of EU agencies however, especially given that the European Maritime Safety Agency, who also flies drones in the Mediterranean, has specifically asked developers for their drone's "acoustic and visual signature" (Loukinas, 2022). It should be noted that while this thesis focuses on pullbacks more than pushbacks, as pullback operations can involve drone gathered information, pushbacks, and often quite violent ones, are still happening within the EU. Especially Croatia and Greece are known for their brutal tactics, going as far as forcing migrants back onto vessels without a motor or any means od propulsion to drift back into the sea (Kampf et al., 2023).

4.1.7. Human rights violations by third countries

The criticism against these kinds of pullbacks and the standing legal precedent against pushbacks are based on the violation of the human right to non-refoulment agreement, which prohibits the return of refugees to countries or region where they may face human rights abuses. Given this, **human rights violations by third countries** were coded for in the dataset of literature as 'References to human rights violation committed by third countries that were facilitated by drones'.

These articles by Topak, Marin and Krajčíková, Glouftsios and Loukinas, Klein, and Loukinas all specifically mention Libya's horrendous treatment of migrants, referring to arbitrary detention, rape and torture, coinciding with growing Libya-EU cooperation. As previously mentioned, the EU and especially Italy have trained and equipped the Libyan Coastguard to be able to intercept migrants trying to leave Libyan territorial waters or to pull them back from international waters. Additionally, data gathered by drones has been shared in order to facilitate these pullbacks. (Glouftsios & Loukinas, 2022; Klein, 2021; Loukinas,

2022; Marin & Krajčíková, 2015; Topak, 2019). Klein, Glouftsios and Loukinas, and Topak directly link the EU to these human rights abuses due to their cooperation and assistance to return and keep migrants in these conditions. Especially Klein (2021), as a legal scholar, discusses this issue in detail. She mentions the call for state cooperation in search and rescue operations established in the SAR Convention. However, she goes on to question whether the cooperation that is designed to facilitate pullbacks qualifies as a search and rescue operation. Furthermore, she discusses the EUs liabilities these human rights abuses. As the EU and FRONTEX do not account for the well-known human rights situation in Libya in their cooperation with the state, they may be an accessory to these abuses.

This question is currently at the center of the lawsuit *S.S. and Others v. Italy* filed with the ECHR. It concerns a confrontation between the Sea-Watch 3, a ship operated by the NGO Sea-Watch, and the *Ras Al Jadar*, a vessel operated by the Libyan Coast Guard (LYCG). Both had responded to a distress call on the 6th of November 2017, by a migrant vessel carrying around 150 people which was about to capsize. During this confrontation the LYCG endangered migrants with their conduct while trying to convince the *Sea-Watch 3* to stop its rescue operation and leave. In the ensuing chaos, in which Sea Watch rescued 59 migrants while the *Ras Al Jadar* was hindering migrants trying to save themselves by climbing on their deck, rescuing a total of 47 migrants, approximately 20 people drowned. The migrants 'rescued' by the LYCG were brought to Libya, where they faced human rights abuses with some of them even being sold and tortured for a ransom from their family (Heller & Pezzani, 2018; Moreno-Lax, 2020). The lawsuit alleges that Italy has conducted a 'refoulment by proxy' in order to circumvent the Hirsi-Ruling and is thus liable for the human rights abuses faced by migrants that were pulled back before they could reach the EU.

As a result, it is not surprising that some of the NGOs pressured into signing the Italian Code of Conduct for NGOs, namely MOAS and MSF, have ceased all operation, citing the EUs and Italy's cooperation with Libya as a reason. They argue that the want to continue helping migrants but refuse to be incorporated into a border control system that tolerates these human rights abuses (Topak, 2019).

4.1.8. Securitization

The notion of migration threatening a society can be appropriated by policy makers to frame migration as a security issue for political reasons. In the case of European border control, this is evident by linking migration to terrorism, drug smuggling or criminality in general. One example of this is the EU funded research project 'Safer European Borders' which listed

‘illegal’ migrants in the same sentence as drug smugglers and terrorists. Mentioning the ‘threat’ of illegal migration in the same context as the threat of terrorism and drug smuggling, crimes of violence, causing devastation and death, establishes migration as a comparable threat, thus allowing for its securitization (Csernatoni, 2018).

As demonstrated, securitization may be conducted through rhetoric and discourse. Martins and Jumbert (2022) point out that securitization may also be embedded and reproduced by routines, technology, training, etc.

In this analysis the term ‘Securitization’ was coded as ‘References to securitization related to drones’ and was applied a total of 38 times in 9 out of 10 articles in the dataset. ‘Securitization’ has multiple linkages to other codes used in this analysis, namely ‘Dehumanization’, ‘Technological Solutionism’, and ‘Militarization’. Those linkages will be further elaborated on in the discussion of each of those respective codes.

The analysis of textual data shows a growing consensus in depicting migration to Europe, especially boat migration, as threat; external borders being framed as a ‘entry point’ to this threat (Klein, 2021; Martins & Jumbert, 2022). The framing of migrants as a threat rather than people escaping violence or looking for a better life allows for a security approach rather than a humanitarian one. Law enforcement and border personal are thus used to prevent migrants from entering the EU rather than helping them. As noted by Martins and Jumbert (2022), migrants are often displayed as both a ‘risk’ and ‘at risk’, and thus establishing a need for a ‘care and control’ approach to migration. The need for care and control adds another layer of securitization, which is characterized by a lack of knowledge, since knowledge is necessary to both help migrants and to stop them reaching the EU outer borders. An increase in migration and subsequent securitization trigger a need for knowledge to which ICTs are presented as a technological fix. Militarization, and in extension drones, are understood to intensify securitization. The increased usage of military equipment for border surveillance and control to curb migration reinforces this depiction of migration as a threat that needs to be addressed. Securitization and technological solutions like drones therefore reinforce each other and produce a spiral of further securitization (Koslowski & Schulzke, 2018; Loukinas, 2022; Martins & Jumbert, 2022).

The appliance of securitization theory further highlights the fundamental tension between humanitarian and border control in European migration management. Drones represent a clear step towards control and surveillance rather than a humanitarian approach; claim of the usefulness of drones for humanitarian operations in the European border security nexus has

been disproven earlier (Kapitel S&R). Similarly, the trend among southern European Member states to prioritize border control over humanitarian obligations, by interpreting these obligations as narrowly as possible while, at the same time implementing stricter laws on migration and ramping up the policing levels at the border, were highlighted in the 'Search&Rescue' discussion above (Klein, 2021). FRONTEX for example took part in forums dedicated to the securitization of borders, involving arms- and defense companies (Csernatoni, 2018).

4.1.9. Technological Solutionism

'**Technological solutionism**' code which was coded as 'References to the notion that a societal issue such as the humanitarian catastrophes in the Mediterranean can be solved by technical equipment'

Drones have repeatedly been framed as such a technological solution. That are regarded as being capable of fixing both the border security as well as humanitarian issues in the Mediterranean by both manufacturers and governmental agencies such as FRONTEX (Csernatoni, 2018; Martins & Jumbert, 2022). As discussed above in the context of securitization, the 'need for knowledge' created by securitization dynamics is where drones are likely to be introduced as a technological 'fix'. This co-production of societal problems and solutions fails to address the underlying complexity of the issues facing migrants in the mediterranean (Martins & Jumbert, 2022). In line with this logic other articles within the dataset highlight that technical solutions cannot fix the sum of complex underlying societal factors which create the current situation on the EUs outer borders (Glouftsios & Loukinas, 2022; Loukinas, 2022; Marin & Krajčíková, 2015; Molnar, 2022).

Csernatoni (2018) even equates the usage of high tech 'solutions' like drones to the failure to address migration challenges with other means and speaks of drones as 'technological silver bullets' in reference to the folkloric myth that werewolves can only be killed using silver bullets. The metaphor is odd but interesting, suggesting that just like werewolves the threat posed by migrants is (largely) imaginary or overstated.

4.1.10. Militarization

'**Militarization**' was coded as 'References to a Militarization of EU border control' and could be found 40 times across 8 articles.

As early as 2015, Milivojevic (2015) highlighted the militarization and importation of military language and rational, while Marin and Krajčíková (2015) already identified the militarization of border control as part of a larger securitization process and a characteristic of the so called 'Fortress Europe'.

The dual-use nature of drone, initially invented as military technology which can also be used in the civilian world, has essentially allowed for the importation of military technology, rational and values into the civilian, especially law enforcement realm. Furthermore, the dual use nature blurs the line between military and police, reinforcing existing securitization dynamics regarding border control and migration; thus it increases the potential of violence in the Mediterranean (Csernatoni, 2018; Koslowski & Schulzke, 2018; Martins & Jumbert, 2022). Intelligence gathered by such dual use drones is primarily military in its nature, and primarily used against migrants rather than helping them (Loukinas, 2022). This creates a striking contradiction to the line of argumentation by agencies like FRONTEX claiming that military style drones are purchased to assist in search and rescue operations, as Topak (2019) notes. Given this development, both Topak (2019) and Csernatoni (2018) note the almost paramilitary nature of agencies such as FRONTEX, while critiquing the fact that there are no internal control mechanisms for this development within FRONTEX itself.

Lastly, the role of the defense industry should be noted. Given the sizable funding of drone and surveillance research by the EU and the potential of providing numerous drone platforms for the European border control nexus, defense and aeronautics companies are sensing a lucrative business opportunity and have attempted to influence EU policy by lobbying, by hosting events and demonstrations for EU member states and FRONTEX, trying to further the militarization process of border control (Csernatoni, 2018).

4.1.11. Deterrence

One of the main purposes of the current EU border control policy is the deterrence of migrants. Within this paper, 'References to deterring migrants from attempting to enter the EU via the Mediterranean related to drones' were therefore codes as '**Deterrence**'. This code was among the least often coded in my dataset with merely 13 applications.

The image of the Fortress Europe alone is a deterrence and. Drones and their surveillance capabilities play a pivotal role in enforcing the technical barriers of the EU border control. One seemingly tolerated consequence of the attempted deterrence of migrants is that by restricting regular migration and increasingly policing known channels of irregular migration, migrants are forced to enter ever more perilous routes to cross the Mediterranean. This in part

the reason for the dramatically rising death toll among migrants attempting the crossing (Marin & Krajčíková, 2015; Molnar, 2022). Furthermore, it connects back to the practices of pushbacks, pullbacks and left-to-die, as these are a the EUs prime tool for ensuring that migrants do not reach the EU's outer borders or even the territorial waters of member states (Topak, 2019).

4.1.12. Moderation

'**Moderation**' has been coded as 'References to the moderation or mediation of border control agents' vision or decision-making process by Drones and the Data the generate'.

As noted, both Csernatoni (2018) and Milivojevic (2015) emphasize that drones tend to view the world from above, often divorced from context, and thus simplifying an otherwise complex reality – a reality, which a human border agent on the ground would pick up. With the absence of context a sense of responsibility is gone, removing a moral obstruction to potential violence (Koslowski & Schulzke, 2018).

The highly automated, computer mediated relationship between the observer, the drone operator or anyone with access to drone gathered data, and the observed, the migrant, is an example of how decision making may be influenced by drone technology (Csernatoni, 2018).

Technical moderation is also linked to militarization as Csernatoni (2018) points out. She uses Feenberg's argument of technological efficiency to show that technology is prone to importing its initial designs and functions into new areas. In the case of drone in border security this mean that legacy designs of drones that were initially designed for the military factor into the ongoing process of militarization of border control. Furthermore, tech designs carry specific socio political biases which can lead to the reproduction and reinforcement of the criminalization of migrants or racism as embedded within the socio-technical surveillance infrastructure (Csernatoni, 2018; Glouftsios & Loukinas, 2022).

Supporting the idea of the spiral of securitization, the concept of 'technological rationality' by Herbert Marcuse describes how new technologies can reorganize societal structures, thus changing what is considered normal, like the securitization of migrants or standards within in border control (Csernatoni, 2018; Marcuse, 1991).

Connected to the notion of 'Moderation' are the codes 'Dehumanization' and 'Power Asymmetry'.

4.1.13. Power asymmetry

'**Power Asymmetry**' was applied only 12 times across 6 documents and was coded as 'References to the impact of drones of the long-established power asymmetry between governmental organizations and migrants.'

Migrants and refugees are generally a vulnerable group. And individual migrants are often powerless against the European border control apparatus which operate large scale databases into which drones feed information (Martins & Jumbert, 2022; Molnar, 2022). However, as discussed previously, while personal data is gathered by the EU border security apparatus, drones are not used to collect information on individuals but rather on specific vessels (Martins & Jumbert, 2022).

The theme of Power Asymmetry links back to Moderation because socio-political biases which are embedded in drone technology can import and reproduce racism and domination in the EU border control system and allow for discrimination through the virtual distance of the observer and the observed. Biased technology can also reproduce patterns of hegemony or domination (Csernatoni, 2018). Molnar (2022) sees this as a reproduction of fundamental inequalities between the global south and the global north and criticizes border surveillance as a technological testing ground on marginalized people with hardly any access to human rights protection resources (Molnar, 2022). Topak (2019) argues similarly that the current EU border security apparatus reinforces global social inequalities. He critically examines human rights themselves as a measure to protect individuals from the abuse of sovereign states that requires in itself the enforcement of the state, highlighting their hypocrisy by using Hannah Arendt's argumentation that the human rights of the individual mean nothing against the sovereign state (Arendt, 1960; Topak, 2019).

4.1.14. Dehumanization

'**Dehumanization**' was coded as 'References to dehumanization of migrants related to drones' and was applied 13 times across 5 articles, making it one of the least discussed ideas.

8 out of these 13 applications were made in Csernatoni's (2018) article 'Constructing the EU's high-tech borders: FRONTEX and dual-use drones for border management'. Its main argument is that drone technology creates a regime of violent dehumanization as drones import biases into European border control, they encourage militarization and are marked by a decidedly dehumanizing rhetoric (Csernatoni, 2018). The usage of dehumanizing rhetoric was also noted by Martins and Jumbert (2022), reminding of the fact that migrants are referred to

as ‘intruder’, ‘object of interest’ or worse. This links back to securitization, as speech is used to produce, reproduce and reinforce the securitization of migrants (Martins & Jumbert, 2022).

The notion of embedded legacy function or biases was also discussed by Koslowski and Schulzke (2018) who noted further militarization by drones through a blurring of boundaries between policing and military combat zones, framing migrants as threats or enemies. This goes along with a datafication of migrants through technological mediated vision as numbers, dehumanized and divorced from content, reducing the moral objection of committing violence (Csernatoni, 2018; Milivojevic, 2015; Molnar, 2022).

4.1.15. Normalization

‘**Normalization**’ was coded as ‘References to the normalization of migration, societal or humanitarian situations related to drones’ and only applied 13 times across four articles.

As argued by Csernatoni (2018), drones are representative of a “war-police nexus” (Csernatoni, 2018) that increasingly combines military technology and policing. FRONTEX is an example of this nexus as the agency demonstrates an almost paramilitary character (Topak, 2019). FRONTEX represents a normalization of mixing police and military in order to enhance the EUs sovereign capacity and to control and project ‘order’ beyond its territorial borders, which links back to the militarization and externalization of the EUs border and migration control (Csernatoni, 2018).

Another aspect of the normalization of drones and the surveillance regime into which they are incorporated is the securitization of migration. As previously established, securitization is used to the effect normalizing the current treatment of migration as a security threat. It manifests itself, among other things, in the language and rhetoric of the involved actors (Csernatoni, 2018; Topak, 2019).

The narrative of efficiency and cost effectiveness of drones should also not go unmentioned. This argument is often used to normalize and justify drones as a solution for European border and migration issues as demonstrated in the discussion surrounding technological solutionism (Csernatoni, 2018; Loukinas, 2022). The technological rationality connected with drones tends to normalize their usage and the larger system behind them (Csernatoni, 2018).

Topak (2019) highlights the role of NGOs in the normalization of the usage of drones and the EU’s border security system. Some humanitarian NGOs help to normalize the EUs actions

and inactions in the Mediterranean. He argues that they humanitarian actors, such as the red cross or in this case civilian search and rescue NGOs, can be used to frame an action or inaction as humanitarian when it is not, like the usage of drones is framed as contributing to humanitarian relief (Topak, 2019). As a neutral actor humanitarian NGOs distance themselves from politics, thus creating a 'anti-political' stance that focuses solely on providing help. According to this role they do not challenge underlying inequalities or power asymmetries that are part of the root cause of the initial conflict. Due to their neutrality these NGOs do not oppose the authorities but cooperate with them. Topak uses the example of MOAS, a NGO solely dedicated to saving life at sea. However, the NGO cooperated with both EU and third country authorities, even demonstrating their drones to Libyan officials on board of their vessel which further served to 'whitewash' drones as a humanitarian tool rather than a piece of military technology embedded in the EUs security apparatus (Topak, 2019).

4.1.16. Solutions

The last code in my codebook was '**Solutions**' which has been coded as 'References to any form of solution offered within the literature of the dataset for the current situation and problems regarding drone usage and the issues that they may intensify' and was coded by far the least with only 10 applications in four articles.

Three solutions offered by the literature have been developed. Koslowski and Schulzke (2018) argue for improved regulation to better address disadvantages embedded within drones. Martins and Jumbert (2022) on the other hand propose a solution focused on the ongoing securitization that enables the current EU migration and border policy. They argue for a re-humanization of migrants and a de-securitization of migration to address the humanitarian and human rights issues connected to the status quo in the Mediterranean (Martins & Jumbert, 2022).

The solution most often proposed, however, is the 'Watchdog' solution. This means a monitoring system should be established. Thereby, either a part of the border security complex is separated from its peers in order to monitor their conduct, or a NGO is surveilling the surveilles to uncover misconduct or human rights abuses (Koslowski & Schulzke, 2018; Loukinas, 2022). In his model distinguishing between humanitarian and human rights surveillance NGOs, Topak (2019) highlights the uses of NGOs dedicated to monitoring and documenting human rights abuses such as Sea-Watch. Because these NGOs do not interpret

human rights as a means to themselves but as a tool to advance social equality and challenging existing social hierarchies (Topak, 2019).

4.2. Interview

As mentioned in the (3). methods section, I conducted an interview with Bruno Oliveira Martins, a researcher at the Peace Research Institute Oslo (PRIO), who is an expert on migration and security technologies to add additional insight to my analysis.

Dr. Martins described the EU border management system as semi-permeable, facilitating easy travel for citizens, travelers and wanted migrants, while restricting the mobility of unwanted migrants. Answering to the question how smart borders changed migration management, he identified the goal of the EU border and migration management system as designed to keep migrants from the actual European border, and thus the possibility of claim asylum. In his opinion drones are not used to target specific individuals but to gather real time data on groups of people, serving the need of EU border agents and policy makers for meta-knowledge. He argued that the concrete implication of drones, however, is that they replace the need for EU border control vessels to patrol EU waters. This would relief the EU of the immediate responsibility to assist migrant vessels in case of distress, and bring them to a safe port, where migrants can claim asylum, as this legal obligation is bound to the caption of a ship, and thus doesn't apply to drones. The other concrete impact of drones he named is their role in facilitating pullbacks by third countries, which violates international law, especially the right of non-refoulment. In either direct or indirect ways, the increasing reliance of technology is something that in Dr. Martins' view contributes to keep undesired people away from the EU. The specific human rights violations that Dr. Martins mentioned were the pullback of migrants, their right to non-refoulment, their right to safety at sea and their right to claim asylum.

Regarding my second question about the viability of drones for SAR operations when controlled by FRONTEX or other governmental agencies, he pointed out FRONTEX's inaction in a recent case of migrants in distress at sea, which ultimately led to the deaths of hundreds of migrants, despite FRONTEX and the EU member states having had early information about the vessel which could have prevented this tragedy. He described it as a political decision not to intervene. In his opinion drones are technically useful for such operations, and in some cases used by NGOs, but are still embedded in a societal context, meaning the social, economic, and political context of the EU. Drones are a tool, and their impact is determined by its user.

Answering the question how drones affect the data justice for migrants, he stated that while drones are not unproblematic from a data justice perspective, they are not used to surveil individuals but groups of people or vessels. In his view the surveillance conducted by drones is not as relevant to data justice as the large-scale bio metric databases of the EU for example. He did, however, mention how the externalization of borders is reinforced by drones, which is relevant to my second sub-research question.

Regarding possible solutions for the status quo in the Mediterranean he stated that a change in the status quo should happen, but not that it necessarily will happen. He highlighted the need to de-securitize migrants and migration, which could be achieved by informing people in Europe and showing them the reality of migration to Europe, bringing reality closer to home. This, he argued, would weaken populist rhetoric which strongly relies on a lack of information and a contorted, black and white understanding of reality. Policy maker should also listen more to civil society than to the defense industry, which is profit-oriented and, in his opinion, not interested in changing the status quo. Additionally, he mentioned that many scientific articles do not propose solutions, as policy recommendations are not their goal. Instead, solutions are mainly proposed by thinktanks, NGOs, or activist. There are however researchers involved with activist who propose their solutions in forums.

Following his answers to the preexisting questions, we discussed the relationship between securitization and militarization, which can be seen as a self-perpetuating cycle as securitization causes the militarization of border control while the use of military technology further reproduces the securitized image of migration. Lastly, he used the proverb "Everything looks like a nail if you're a hammer" to describe the dangers of importing military technology into a civilian context like border control, because it dehumanizes migrants. It frames them the same way combatants are portrayed in a military context, influencing the decision-making process of border agents by importing embedded military biases.

4.3. Discussion

4.3.1. Sub-Research Question 1

As demonstrated in the analysis part and the interview, drones directly and indirectly affect irregular migrants crossing the Mediterranean Sea in a number of ways. While seeming like an invaluable asset in search and rescue operations, drones operated by FRONTEX or the

southern EU member states do not actually help migrants in distress at sea. Instead, their theoretical value to these operations is utilized to justify their acquisition. In practice they are primarily used to enhance the EU's border surveillance capabilities and, through the cooperation and data sharing with third country border authorities, to intercept migrant vessels before they even leave the territorial waters of third countries or enter European waters. These illegal pullback operations force migrants back to third countries where they can face grave human rights abuses. The system of prevention, into which drones are incorporated, is designed to deter migrants. It forces them to embark in smaller, more dangerous vessels and follow longer and more dangerous routes. Drones also facilitate dehumanization through the moderation of the observer and observed relationship and datafication of migrants, as well as through a militarization of the border security nexus, all of which creates scenarios in which state actors are more prone to violence against migrants.

Lastly, through potentially embedded biases, their military appearance and the militarization of border security, drones add to and reproduce the securitization of migrants in what has been described as a self-perpetuating spiral. Securitization has led to the treatment of migration as a security issue rather than a humanitarian issue and is one of the main factors for the development of the current border security systems into which drones are now incorporated.

4.3.2. Sub-Research Question 2

As discussed, both in the literature and in my interview with Dr. Martins, the goal of smart- or seamless borders is to facilitate an obstacle free border crossing for citizens, goods and wanted migrants, while at the same time preventing unwanted migrants to cross the borders. However, everyone who reaches the European Border can claim asylum. Border agents then have to determine whether or not a person's situation fulfills the requirements for asylum, and if they do, this person then has the right to enter the EU, whether they were categorized as a wanted migrant or an unwanted one. The reliance on technology makes the need for EU border control ships unnecessary, meaning that vessels in distress cannot rely on being rescued by ships nearby, as their presence has been replaced with drones, which do not fall under the UNCLOS or SAR convention. Drones are used to avoid responsibility and liability of migrants attempting to reach Europe.

Surveillance technologies such as drones make it possible to externalize borders into international waters or third country territory to gain situational awareness over the territory

that migrants have to cross before reaching the European borders. In cooperation with third countries through the sharing of data and the conducting of pullback operations, the current EU border control strives to stop migrants before they reach the European borders, regardless of whether they have a right to asylum or not. By utilizing third countries as a proxy to conduct pullback operations, the EU does not conduct these operations itself anymore, thus circumventing the precedent set by the Hirsi Ruling regarding the right to non-refoulment and the general ban on collective expulsion, both human rights adapted by the EU but ignored by some third countries. Whether or not this practice is illegal is still being evaluated by the ECHR.

4.3.3. Sub-Research Question 3

The argument of drones aiding the humanitarian and search and rescue efforts in the Mediterranean have been debunked in the literature, and also in my interview. Drones operated by EU agencies or southern EU member states therefore do not reinforce migrant's human rights to the right to live. Instead, with drone gathered data being used to facilitate the interception and pullback of migrants in territorial waters of third countries, international waters and at times even in European territorial waters, drones contribute to the violation of the ban of collective expulsion and non-refoulment, as migrants can face grave human rights violations in third countries such as arbitrary detention, rape, and torture.

Contrary to my expectation, the use of drones do not violate migrants right to privacy. As explained by Dr. Martin in the interview and in his article, drones do not gather personal information on migrants. Instead, they gather meta data: where a vessel is headed, how many people are on bord, etc.

However, while it this sort of data gathering does not affect migrants' personal data, it should still be regarded critically, because the data generated by drones can lead to further dehumanization of migrants through the moderation of the relationship between the observer and the observed. Embedded techno-cultural biases, through the created distance between the operator and migrants, the de-contextualization or simply through the datafication of migrants all lead to the dehumanization of people crossing the Mediterranean.

Dehumanization reproduces and intensifies to the existing securitization of migration and contributes to potential violent actions and policies in the Mediterranean.

Furthermore, by drastically improving the EU's surveillance capabilities and thus externalizing its border control, drones reproduce and entrench global power asymmetries, from north to south, by selectively limiting the mobility of migrants from the global south, facilitating a system of discrimination against an already vulnerable group.

While the way drones are used at the moment is not directly violating the data justice of migrants, it is still a technology that entrenches and reinforces global inequalities.

4.3.4. Sub-Research Question 4

The solutions found within the scientific literature were far fewer than initially expected. This makes sense however, considering Dr. Martins statement that most scientific papers do not intend to make policy suggestions. Only three solutions were identified. The idea of introducing regulation designed to curb some the negative effects of drones on the observer-observed relationship technically has merit. However, as shown in the analysis, the political will to introduce such regulation is not given.

Martins' and Jumbert's approach of de-securitization and re-humanization of migration is a promising concept, given that the securitization of migration is largely responsible for the way the current EU border control system is functioning and its connection to human rights violations. The securitization of migrants has affected the militarization of migration management and border security, the externalization of European outer borders, the dehumanization of migrants, and the willingness of border agencies to conduct search and rescue operation and provide other humanitarian relief to migrants.

The most repeated solution was that of 'Watchdog' actor, capable of surveilling the actions and inactions of law enforcement and border agents. Both ideas of a governmental watchdog within FRONTEX and a NGO watchdog outside governmental structures have been proposed. Given the lack of political will to improve governmental policy and conduct within the Mediterranean a non-governmental watchdog organization seems more realistic than a governmental one, especially considering that such organizations already exist in the form of Sea Watch, for example. The extraordinary work of that NGO and the information about human rights abuses and the humanitarian situation in the Mediterranean that it published, show that a such a solution is very much viable. Furthermore, this equates on some level to the idea of de-securitization and re-humanization, as pictures and video footage of migrants in

the Mediterranean, people who are risking their life for a better and safer future, would help to counter-act the securitized image of migration.

5. Conclusion

This thesis has provided a comprehensive overview over the arguments and trends within the scientific literature regarding the effect of drones on migrants crossing the Mediterranean, while analyzing their interconnections and merit.

While drones are technically a useful asset for humanitarian missions in the Mediterranean, in reality they are used primarily to reinforce the EU's borders to prevent irregular migrants from crossing. Drones make the traversing of the Mediterranean harder and more dangerous for migrants while reproducing and reinforcing structural inequalities ranging from the securitization of migrants to discrimination and racism. Furthermore, they contribute to the refoulment of migrants to third countries, thus indirectly assisting human rights violations.

The efforts to criminalize and hinder civilian search and rescue operation have undercut the effectiveness of drones to assist further in those operations. To retract policies such as the Italian code of conduct for NGOs may be a solution that, while not addressing the underlying issues of civilian humanitarian operations, could help migrants crossing the Mediterranean in the short term, especially with the use of drones.

This analysis was limited by its narrow scope, only focusing on the Mediterranean, drones, and boat migration. Furthermore, a systematic literature review usually includes a far higher number of articles. This was not possible for me, however, due to the limited time available to write the thesis, my limited resources, and the small scope of the analysis.

Further research could focus on the less widely discussed aspect within the literature such as the solution aspect by conducting a similar analysis using documents or interviews related to think tanks, NGOs, or activists to determine whether they advocate similar solutions as researchers in scientific articles. An analysis of Sea-Watch's impact regarding the perception of migrants in civil society or by policy makers may also be interesting with the aim to validate whether the solution highlighted as the most promising approach in this thesis is supported by the watchdog NGOs tactics. Looking into 'Normalization', one of the lesser discussed codes, a detailed analysis of the impact of drones on border and migration control may also be a possibility for further research.

6. Reference List

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7. Appendix

7.1. Appendix A: Dataset

Document 1: Martins, B. O., & Jumbert, M. G. (2022). EU Border technologies and the co-production of security 'problems' and 'solutions'. *Journal of Ethnic and Migration Studies*, *48*(6), 1430–1447.

Document 2: Loukinas, P. (2022). Drones for Border Surveillance: Multipurpose Use, Uncertainty and Challenges at EU Borders. *Geopolitics*, *27*(1), 89–112.

Document 3: Koslowski, R., & Schulzke, M. (2018). Drones Along Borders: Border Security UAVs in the United States and the European Union. *International Studies Perspectives*, *19*(4), 305–324, from https://academic-oup-com.ezproxy2.utwente.nl/isp/article/19/4/305/5004643?login=false.

Document 4: Marin, L. & Krajčíková, K. (2015). Deploying Drones in Policing Southern European Borders: Constraints and Challenges for Data Protection and Human Rights. In *Drones and Unmanned Aerial Systems: Legal and Social Implications for Security and Surveillance* (pp. 101–127).

Document 5: Klein, N. (2021). Maritime autonomous vehicles and international laws on boat migration: Lessons from the use of drones in the Mediterranean. *Marine Policy*, *127*, 104447, from https://www.sciencedirect.com/science/article/pii/S0308597X21000579.

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Document 7: Csernatoni, R. (2018). Constructing the EU's high-tech borders: FRONTEX and dual-use drones for border management. *European Security*, *27*(2), 175–200.

Document 8: Topak, Ö. E. (2019). Humanitarian and Human Rights Surveillance: The Challenge to Border Surveillance and Invisibility? *Surveillance & Society*, *17*(3/4), 382–404, from Document 9: Glouftsios, G., & Loukinas, P. (2022). Perceiving and Controlling Maritime Flows. Technology, Kinopolitics, and the Governmentalization of Vision. *International Political Sociology*, *16*(3).

Document 9: Glouftsios, G., & Loukinas, P. (2022). Perceiving and Controlling Maritime Flows. Technology, Kinopolitics, and the Governmentalization of Vision. *International Political Sociology*, *16*(3).

Document 10: Milivojevic, S. (2015). Re-bordering the Peripheral Global North and Global South: Game of Drones, Immobilising Mobile Bodies and Decentring Perspectives on Drones in Border Policing. In *Drones and Unmanned Aerial Systems: Legal and Social Implications for Security and Surveillance* (pp. 83–100).

7.2. Appendix B: Coding Table

Codes	Description	Example
Data Sharing	References to the sharing of data generated by drones with actors outside the EU	*"In utilising drones for surveillance purposes, human rights advocates believe that the information is being relayed to Libyan authorities to retrieve the vessel"* Klein (2021) Maritime autonomous vehicles and international laws on boat migration: Lessons from the use of drones in the Mediterranean
Dehumanization	References to dehumanization of migrants related to drones	*"This double-distance is translated in the so-called bureaucratisation and gamification of surveillance (Asaro 2013, Coeckelbergh 2013), which implies the lack of human empathy and the removal of moral and psychological foundations"* Csernatoni (2018) Constructing the EU s high tech borders FRONTEX and dual

		use drones for border management
Deterrence	References to deterring migrants from attempting to enter the EU via the Mediterranean related to drones	*" […] however, the surveillance of specific areas, outside the EU borders, will probably deter (migrants') vessels from using a specific route and perhaps, use another, more dangerous, route."* Marin and Krajcikova (2015) Deploying Drones in Policing Southern European Borders: Constraints and Challenges for Data Protection and Human Rights
Externalization	References of the externalization of the EU border control outside the EU outer borders involving drones	*"The extra-territorialisation of surveillance also entails surveillance of territorial waters of TCs: this is a sensitive issue as it touches upon the territorial sovereignty of those states"* Marin and Krajcikova (2015) Deploying Drones in Policing Southern European Borders: Constraints and Challenges for Data Protection and Human Rights
Militarization	References to a Militarization of EU border control	*"[…] have the potential to "further militarise […] government agencies" (Wall and Monahan 2011, pp. 243–245) such as FRONTEX"* Csernatoni (2018) Constructing the EU s high tech borders FRONTEX and dual use drones for border management
Moderation	References to the moderation or mediation of border control agents' vision or decision-making process by Drones and the Data the generate	*" […] Shachtman (2005) expresses concern that drones provide a detached and dehumanizing perspective on migrants that facilitate efforts to characterize them as threats and legitimize violence against them."* Schulzke and Koslowski (2018) Drones Along Borders: Border Security UAVs in the United States and the European Union
Multipurpose	References to the multipurpose nature of drones	*"In relation to the Channel, the United Kingdom's British Civil Aviation Authority has deployed drones for 'national security and the protection of human life' [89,90]. Both dimensions are important, and one should not come at the expense of the other."*

		Klein (2021) Maritime autonomous vehicles and international laws on boat migration: Lessons from the use of drones in the Mediterranean
Normalization	References to the normalization of migration, societal or humanitarian situations related to drones	"*The promotion of drones as efficient security tools for deployment at EU borders can contribute to their normalization"* Csernatoni (2018) Constructing the EU s high tech borders FRONTEX and dual use drones for border management
Power Asymmetry	References to the impact of Drones of the long-established power asymmetry between governmental organizations and migrants	*"Biased technological objects (Feenberg 1999, p. 3) such as drones contribute to the reproduction of specific systems of domination and hegemonic practices of coercion and control by privileged actors and their worldviews against less privileged "others"."* Csernatoni (2018) Constructing the EU s high tech borders FRONTEX and dual use drones for border management
Pullbacks	References to the practices of both pushbacks and pullbacks facilitated with the involvement of drones	*"Aware of the limits that the Hirsi judgment has placed on their extra-territorial action, European states increasingly seek the cooperation of North African countries."* Marin and Krajcikova (2015) Deploying Drones in Policing Southern European Borders: Constraints and Challenges for Data Protection and Human Rights
Responsibility	References to states responsibility to act in situations related to drones	"*to prevent migrants from reaching the SAR zones and territorial waters of the member states, which allows national authorities to evade their responsibility of rescuing people in distress and disembarking them to Europe*." Glouftsios, G., & Loukinas, P. (2022). Perceiving and Controlling Maritime Flows. Technology, Kinopolitics, and the Governmentalization of Vision
Search & Rescue	References to the capacity and/or usage of drones for Search and Rescue Operations in the Mediterranean	*" […]and support the detection of migrants in distress at sea."* Loukinas (2022) Drones for Border Surveillance Multipurpose Use Uncertainty and Challenges at EU Borders

Securitization	References to the securitization related to drones	*"[…]following the EU's approach of seeing them as a threat to its internal security"* Loukinas (2022) Drones for Border Surveillance Multipurpose Use Uncertainty and Challenges at EU Borders
Solutions	References to any form of solution offered within the literature of the dataset for the current situation and problems regarding drone usage and the issues that they may intensify	*"Yet surveillance also introduces new accountability mechanisms for law enforcement officers, administrators, and contractors. It is even possible to imagine NGOs providing third-party monitoring capacities."* Schulzke and Koslowski (2018) Drones Along Borders: Border Security UAVs in the United States and the European Union
Third Country Violations	References to human rights violation committed by third countries that were facilitated by drones	*"[…]are each responsible for their failures to prevent human rights violations, most particularly the principle of non-refoulement and the right to life"* Klein (2021) Maritime autonomous vehicles and international laws on boat migration: Lessons from the use of drones in the Mediterranean
Technological Solutionism	References to the notion that a societal issue such as the humanitarian catastrophes in the Mediterranean can be solved by technical equipment	*"Overall, it seems that drone technology will increase surveillance, but how the latter will increase the security of migrants is not yet clear."* Marin and Krajcikova (2015) Deploying Drones in Policing Southern European Borders: Constraints and Challenges for Data Protection and Human Rights

7.3. Appendix C: ATLAS.ti Analysis

	Doc 1	**Doc 2**	**Doc 3**	**Doc 4**	**Doc 5**	**Doc 6**	**Doc 7**	**Doc 8**	**Doc 9**	**Doc 10**	**Sum**
Data Sharing	1	4	0	3	2	0	1	11	5	0	27
Dehumanization	1	0	1	0	0	1	8	0	0	2	13
Deterrence	0	0	1	1	0	3	3	2	2	1	13
Externalization	0	1	1	5	1	1	8	4	6	4	31
Militarization	2	4	7	3	1	0	15	6	0	2	40
Moderation	0	0	2	0	0	3	8	0	3	1	17
Multipurpose	0	7	3	0	1	1	5	0	0	0	17
Normalization	0	1	0	1	0	0	6	5	0	0	13
Power Asymmetry	1	0	1	0	0	2	3	4	1	0	12
Pullbacks	0	3	0	4	5	1	0	6	3	1	23
Responsibility	0	3	0	0	7	1	0	4	2	1	18
Search& Rescue	2	4	5	6	5	0	6	7	11	2	48
Securitization	7	2	4	3	4	3	10	3	0	2	38
Solution	1	1	5	0	0	0	0	3	0	0	10
TC Violations	0	1	0	3	6	0	0	7	1	0	18
Technological solutionism	4	2	0	3	0	3	6	0	1	0	19
Sum	19	33	30	32	32	19	79	62	35	16	357