Geopolitical Dimension of Libyan Drone Warfare

The Use of Turkish Drones on the North African Battlefields

János Besenyő¹, András Málnássy²

Abstract

As a result of the "Arab Spring" and the transformation of the global world order, the MENA region, and the relations with North African countries therein, are on the rise both for the international and regional actors including Russia and China as well as Saudi Arabia, Egypt, Israel, Iran and Turkey, respectively. Examining Turkey's expansive foreign policy, we can also get an idea of how Ankara wishes to increase its sphere of interest in the wider region, particularly in the Eastern Mediterranean region, by supporting a North African country. In recent years, Turkey has become one of the best-known and most important global exporters of military unmanned aerial vehicles (UAVs), commonly known as drones, in the world military equipment market. Turkish drone development and warfare has introduced many innovative military operational concepts that have achieved great success in the conflicts of recent years. The study examines how 'new types' of technologies such as UAVs can shape regional power dynamics through the case study of the Libyan civil war and drone warfare.

Keywords

Geopolitics; UAVs; Drones; Libya; Turkey.

Acknowledgements

This article resulted from research supported by the New National Excellence Programme of the Ministry of Culture and Innovation and the National Research, Development and Innovation Fund, code number ÚNKP-23-3-II-OE-49.

¹ Óbuda University, Doctoral School on Safety and Security Sciences, Budapest, Hungary ORCID: 0000-0001-7198-9328, e-mail: besenyo.janos@uni-obuda.hu
² Óbuda University, Doctoral School on Safety and Security Sciences, Budapest, Hungary ORCID: 0000-0002-3196-4967, e-mail: malnassy.andras@gmail.com
Introduction

The Middle East and North Africa (MENA) region, of which Libya is also a part, is considered a regional security complex in the classical sense, in which many state actors have similar military potential and intent to influence (Buzan et al. 1998, 10-13). There is no dominant or hegemonic regional power in the MENA region, the region is characterized by multipolarity, and there are at least five states (Saudi Arabia, Egypt, Israel, Iran and Turkey) being capable of acting as regional powers in the region. In addition to these actors, in recent years, the growing power projection ambitions of the Gulf States, namely Qatar and the United Arab Emirates, as well as the appearance of their resources (economic, scientific and technological) in the region can be observed. The fragmentation of power and different interests in the region led to various forms of insecurity, such as the development of violent conflicts (Hinnebusch and Kausch 2014).

The significant oil and gas reserves and the strategic role of fossil fuels in the current global economy made the MENA region one of the most important geopolitical regions in the second half of the 20th century (Tagliapietra 2019). The region attracts the geopolitical and geoeconomic interests of many external actors, primarily the United States, European countries, Russia, and China, whose interest has sometimes been more intense and sometimes has shown a decreasing trend. In the past decades and perhaps even today, the United States has been the most important external actor in the Gulf region, while European countries maintain stronger relations with North African countries due to geographical proximity and historical ties (Colombo and Soler i Lecha 2021).

Over the past decades, other actors such as Russia and China have also increased their energy, economic and political interests in the region (Issaev 2021, 426; Wang and Sun 2024). In addition, the increase or decrease of external influence, i.e. its continuous change, had and still impacts regional dynamics and competition. This transformation process was reinforced by several events, among which the Arab Spring of 2011 and emerging changes in domestic and foreign political processes are highlighted in the study. Another such feature is the continuous American withdrawal from the region which left a political vacuum and paved the way for the aspirations of regional and other countries outside the region. After the outbreak of the Arab Spring in 2011, a new ideological fault line emerged that influenced the political changes in the MENA region and later the Libyan civil war (Malvig 2013). On one hand, this created a group of actors who sympathized with the Muslim Brotherhood, and on the other, a group of those who sought to eliminate the political and social influence of the movement and a loose alliance of states. This ideological opposition was also manifested in the strategies followed by individual actors in regional conflicts, including in the case of the Libyan civil war (Colombo and Soler i Lecha 2021). The study of Libya is also important because of the country’s geostrategic location, which is seen as the central area of the Mediterranean Sea and the Maghreb, making the country the gateway to sub-Saharan Africa. On the other hand, the country’s significant oil and natural gas reserves make it an important state in the MENA region from a geopolitical point of view, attracting the attention of regional and global powers.

Due to technological development, new technical tools, such as drones, are increasingly being used in conflicts in the MENA region (Çağlar 2023). This development resulted in the development
of warfare, i.e. drone warfare, and brought about a change of attitude in terms of warfare. The appearance of new technologies on the battlefields also had an influence on regional power relations and the ability of individual players to assert their foreign policy interests. The recognition of this can be observed in the case of Turkey, according to which the country made huge efforts to be able to be spoken of it as a "great power" in terms of drones, and with their development, they play a significant role in the development of the battlefield applications of this new technology.

**Methodology**

Drones are one of the new types of technology that have great potential in terms of their use (Besenyő and Málnássy, 2022, 15-16). The successful use of Turkish drones in several conflicts (Syria, Libya, Nagorno-Karabakh, Ukraine) initiated new research directions and thinking about the theory and practice of warfare. From this point of view, the Libyan battlefield can also be considered an important stage, as the Libyan civil war was also characterized by the widespread use of drones of various types and manufactures. The scientific approach to drone warfare generally focuses on the use of drones against terrorist organizations and groups, especially in the case of Western state actors (Hudson et al. 2011; Vogel 2020). The Libyan war showed how opposing parties in a military conflict can be successful on the battlefield with the use of drones in large numbers of airstrikes.

The successes of Turkish drones in Libya and their demonstrated effectiveness have sparked international interest. In May 2021, Poland became the first NATO country to purchase Turkish drones, and Saudi Arabia and the United Arab Emirates, countries in the "coalition" against Turkey in the Libyan conflict, also expressed interest in Turkish drones (Soyaltin-Colella and Demiryol 2023, 735). In December 2020, it was also suggested that a new drone program might be launched in the United Kingdom based on the battlefield successes of Turkish drones (Sabbagh 2020). The appearance and successes of Turkish drones on the battlefield began to change the science of drone warfare.

The study aims to shed light on the connections between drone warfare and the assertion of foreign policy interests through the chosen Libyan case example and primarily analyzes the issue to be investigated from a Turkish perspective. The series of anti-government demonstrations that broke out in early 2011 brought significant changes to the countries of the Middle East and North Africa. The Arab Spring fundamentally changed the political map of the region, the status quo was disrupted and an unstable domestic political situation emerged in many countries. The changed circumstances also posed a challenge for Turkey, which has regional power ambitions, and for Turkish foreign policy. The accelerated processes forced a reevaluation of foreign policy concepts, during which the Asia Minor country was forced to abandon the policy of "zero problems with neighbours" associated with the name of Foreign Minister Ahmet Davutoğlu. The Libyan civil war was one of the challenges that Turkish foreign policy had to face seriously. The events highlighted the vulnerability of the foreign policy concept and showed the Turkish leadership that a more active and proactive foreign policy is needed to maintain the country’s role as a central power.

---

3 The "zero problem" policy seeks to minimize conflicts with neighboring countries and regions and avoids involvement in international conflicts. Ahmet Davutoğlu’s vision foresees Turkey becoming a global player.
The study hypothesises that the "zero problem" Turkish foreign policy paradigm changed during the "Arab Spring" and turned into a more expansive, pragmatic policy in the sense that the country would be willing to intervene with hard power in the internal political processes of the countries it considers its sphere of influence. Regarding the application of hard power devices, Turkish new technologies, i.e. a large number of drones, play a prominent role. The research aims to contribute to the discourse on the change in the global application of drone warfare. In the case of the Libyan civil war, it presents the possibilities of using drones and drone warfare, the aspects of which as tools of analysis can provide new, in-depth insights into the scientific debates about the future of drone warfare.

As the theoretical background and methodological framework of the analysis, the author chose the regional security complex theory (RSCT) (Buzan et al. 1998, 10-15) and the multiple hierarchy model (MHM) (Lemke 2002a). RSCT deals with the explanation of a state’s foreign policy from the perspective of security dynamics. The dynamics and structure of a security complex are generated by the states within that complex. Four options are available for assessing the impact of change on a security complex: maintenance of the status quo, internal transformation, external transformation and overlay. Overlay means one or more external powers move directly or indirectly (e.g. using proxy) into the regional complex with the effect of suppressing the indigenous security dynamics. The multiple hierarchy model focuses on understanding the causes of wars through the examination of regional power relations. The basis of the model is that the international system consists of several smaller systems, so-called local hierarchies. These local hierarchies function similarly to the international system where there is a dominant state locally and also, there are major, medium and minor powers that interact with each other (Lake 2009). An important point in this model is that international major powers can intervene in local hierarchies. However, this situation only occurs when the interests of a larger power are threatened. Intervention can cause regional wars and destabilize the regional order. War occurs when a regional major power gains greater influence and challenges a local dominant power or powers (Lemke 2002b).

Using the two models, the research examines the changes in power structures in the Libyan civil war and how the use of drones can promote Turkey to become a more dominant power in a conflict like this. The two models allow us to examine the motivations of Turkish foreign policy and the changes in its behaviour, and to explain its role in the Libyan civil war through an empirical case study. The author uses drone or combat drone (UCAV) and UAV in this study as synonyms for each other.

The Powers Opposed to One Another in the Libyan Civil War

In Libya’s civil war that broke out in 2011, internal struggles for governance led outside powers to support different parties based on their political and economic interests, as well as their ideology. In the country, two major groups were competing with each other. The Government of National Accord (GNA), based in Tripoli and supported by the United Nations and the Libyan National Army (LNA) led by General Khalifa Haftar. While the GNA controlled the western part of Libya, including Tripoli, the LNA controlled the eastern and central parts of the country. The GNA was mainly supported by Turkey, the United States, the European Union, Italy and Qatar. On one hand, Turkey supported the GNA with military advisers, drones, and other military equipment, and on the other,
with mercenaries from the Sultan Murad Division. The mercenaries came primarily from Syria and also delivered various military equipment to the country (Sprengel 2021, 18). The LNA was indirectly supported by the Russian Federation through the mercenaries of the Wagner Group and the Moran Security Group, as well as Egypt, France, Sudan, Chad, and Nigeria through mercenaries, and the United Arab Emirates also helped General Haftar’s troops with drones (Sprengel 2021, 18). The complexity and escalation situation of the Libyan civil war is shown by the fact that there are many tribal, regional, political and religious antagonisms and competing territorial claims in the country. The large number of opposing parties, as well as their proxy nature in many cases, facilitated the deployment of military equipment such as drones. The power vacuum created due to the lack of stable power relations in the North African country can explain the magnitude of the international intervention in the conflict, the escalation and the prolonged nature thereof.

As the civil war progressed, the strategic role of the Gulf States in the North African country increased, as the Western powers were not willing to deploy a larger military presence in the country and used their political influence moderately to stabilize state institutions. Among the Gulf States, we can mention two countries, the United Arab Emirates and Qatar, which countries were positioned in opposition with each other in the conflict (Lund 2022, 30). The main ideological divide between the two countries stems from the assessment of the role of political Islam in governance. On one hand, Qatar – together with Turkey – considers Islamist political groups, including the Muslim Brotherhood, as a moderate and widely accepted political factor, which, in their view, can gain a powerful role in Libya. The operation of the Muslim Brotherhood is not considered dangerous for the Gulf monarchies. In contrast, the United Arab Emirates, along with Egypt, Saudi Arabia, France and Russia, supported the establishment of a secular government in which religion could play only a limited role. The United Arab Emirates sees Islamists as a threat to its development model and state structure, and believes that the spread of the Muslim Brotherhood’s ideology could hinder the political systems of the Persian Gulf states. In addition to all of this, both Turkey and the UAE saw the Libyan civil war as an opportunity to increase their foreign policy room for manoeuvre and expand their political and economic influence both in the North African country and in the wider MENA region (Harchaoui 2020, 3-10).

Emergence of Turkish Foreign Policy Interest in the Military Involvement in Libya

With the events of the "Arab Spring" in progress, it was increasingly confirmed that Turkey’s zero-problem foreign policy with its neighbours did not work. Rather, the growth of Turkish geopolitical ambitions appeared and even recognized in many cases that Turkish foreign policy goals can only be achieved using military force. The Turkish geopolitical ambitions of recent years are not only appearing on land (e.g. Syria, Libya), but also in the Mediterranean Sea. The expansive direction can also be seen in action in the Turkish foreign policy concept: the Turkish concept of "home" (vatan) no longer only refers to the land (Anatolia), but also to the "blue homeland" (mavi vatan), i.e. the seas (Kurç 2022, 19-20). In 2019 and 2021, the largest naval exercise in Turkey’s modern history was organized under the name "Mavi Vatan". Hundreds of warships and other ships, submarines and numerous drones took part in the operation in the Black, Aegean and Mediterranean seas
János Besenyő, András Málnássy

(Denizeau 2021, 7-23). The military exercises also symbolically marked the direction of Turkish foreign policy expanding towards the "blue homeland".

In Libya, Ankara’s clear strategic goal with military intervention was to ensure and support the survival of the allied government in Tripoli, as well as to protect its economic interests and positions of power. However, it soon became clear that the assistance provided through military equipment, which began in April 2019, was not enough to achieve these goals, so military intervention became inevitable for Turkey. In November 2019, the units led by Haftar achieved a significant breakthrough, and Recep Tayyip Erdoğan therefore decided in favor of actual military intervention (Harchaoui 2020, 2).

For Turkey, in addition to supporting the Muslim Brotherhood and weakening regional opponents, i.e. gaining position at the expense of strategic rivals Egypt, the United Arab Emirates and Saudi Arabia, other geopolitical and foreign policy goals were behind the military participation in the Libyan civil war. The signing of the Memorandum of Understanding (MoU) with the GNA on November 27, 2019 on the territories of the Mediterranean Sea and military cooperation is considered to be the beginning of a new phase in Ankara’s Libya policy (Schaller 2022, 552). The political significance of the two documents goes beyond the borders of the civil war-stricken country and is embedded in Turkey’s actual military intervention. The first agreement highlights that the maritime borders of the Eastern Mediterranean region may be subject to dispute, as a completely new situation has developed due to the oil and natural gas deposits discovered in the region in recent years. It turns out that Turkey’s political and economic goals do not stop at the shores of Libya. In the Turkish-Libyan Maritime Agreement, Ankara agreed on a nearly 18.6 nautical mile (35 km) long common maritime border with the Libyan Unity Government (Elmaloul 2021, 4). In practice, this means that it declared a significant part of the Mediterranean region that belonged to Greece and the Greek Cypriots as its own (Schaller 2022, 554). It also follows that Recep Tayyip Erdoğan’s endeavour can be seen as part of an expansive regional policy aimed at exploiting the raw materials in the Mediterranean region, and in this, Libya can be an important ally and partner of Turkey. In the second agreement, cooperation was extended to actual military assistance, counter-terrorism training, and assistance in managing migration, military transport and exchange of experts. The agreement was ratified by the Libyan unity government and the Turkish Parliament in December 2019 (Lund 2022, 37).

One of the important "side theatres" of the Libyan conflict from the Turkish point of view is the eastern basin of the Mediterranean Sea, since the strategically important natural gas deposits found there are located at the intersection of Turkey’s broader geopolitical goals. In recent years, the geostrategic importance of the Eastern Mediterranean region has increased, and foreign policy activity in the region has also increased significantly (Lund 2022, 6). This is largely because several significant gas fields have been discovered since 2009 in the seas bordered by Egypt, Israel and Cyprus. According to some researches, there are still considerable reserves of hydrocarbons there, and this attracted the attention of the governments of the surrounding countries (BNP Paribas 2023). By taking advantage of the opportunities, the countries that still need to import can become gas exporters, and energy centres and gain huge revenues. Because of the gas wealth in the eastern Mediterranean basin, Turkey wants to achieve a "redrawing" of maritime borders and claims significant areas for itself. In this endeavour, it considers Libya, the dominant state of the Mediterranean region, as an ally (Tziarras and Harchaoui, 2021).
Turkey’s goals regarding the Eastern Mediterranean region are clear. The Turkish government wants to secure for itself the right to extract the natural resources found under its own continental shelf included with the territories belonging to the Turkish Republic of Northern Cyprus. To this end, the country sought an ally in the region (Libya) and sent research vessels and warships to the waters under its jurisdiction as a demonstration of force. With this step, Ankara tries to put pressure on unfavourable cooperation recently developed in the Eastern Mediterranean (Egypt, Israel, Republic of Cyprus, Greece, Italy, Jordan), and especially on Cypriot research (Lund 2022, 30).

Advantages of Using Drones on the Battlefield and Drone Warfare as Possible Means of Foreign Policy Power Projection

Various unmanned aerial vehicles (UAVs) or systems (UAS) are increasingly playing a decisive role in today’s wars and armed conflicts. Demand for military drones is growing rapidly, with exports of the devices also rising in the Middle East, Africa and Europe (Kurç 2023). Both state actors and non-state armed groups are increasing their drone capabilities and actively using them in various conflict zones (Archambault and Veilleux-Lepage, 2024). The multi-purpose use of UAVs has increased the demand for drones in recent years. One of the application advantages of the drone is that it is pilotless, which allows it to stay in the air continuously for longer periods since the human physical need does not appear. On the other hand, payloads, i.e. additional weapons or, where applicable, weapon systems, can be installed instead of the cockpit. By using drones, domestic political risks can also be reduced in the case of a state actor, as their use can also avoid such a delicate loss of life since the control personnel are not exposed to direct danger while carrying out the military operation (Petrosyan 2024, 151-160). Since the political and actual costs of using unmanned devices can be lower, while efficiency can be increased with precision weapons and tools, these characteristics contribute to the widespread adoption of drones. Drones have been deployed on numerous occasions to carry out targeted attacks, including in Afghanistan, Pakistan, Iraq and Yemen (Congressional Research Service 2023). While in these countries drones were primarily used for targeted liquidations (against terrorist groups and individuals) (combat, tactical level), in Syria, Libya, Nagorno-Karabakh and Ukraine, the opposing states or their proxies engaged in drone warfare (military, strategic level). In this study, the characteristics of drone warfare in Libya will be examined in more detail.

One of the combat advantages of using drones in armed conflicts is that they can also fly at lower altitudes, which makes it difficult for radars and traditional air defence systems to detect and intercept them in many cases. Due to these technological characteristics, UAVs are excellent for use in asymmetric conflicts, and for attacks by the militarily weaker party. From a diplomatic and political point of view, the use of drones increases the toolbox and room for manoeuvre of the state decision-makers in the event of a conflict. Since the use of drones by the attacking party does not directly threaten human life, which means less political risk, the attacking party can more easily decide on the military use of drones, but this may also increase the risk of escalation (Johnson 2020, 27-31).

---

4 By asymmetric warfare, the author means a different kind of war, which takes place not only between states, but also between non-state actors.
The military use of drones can change the attacker’s perception of the military operation, thereby increasing the willingness to use it, and can also affect the defender’s perception, which can increase the chance of shooting down the drones. According to the UN Disarmament Research Institute (UNIDIR), the use of drones on the battlefield can lead to accidental escalation, as state actors are more willing to use drones and less restrictive, especially if the use can cause great damage to the defending party. It can be an unintentional escalation, in which the attacker does not expect an escalation, but at the same time provokes an unexpected retaliatory strike on the part of the defending party. One of the reasons for this may be that even if the defending party shoots down the attacking drone, it may feel that it has not caused sufficient and proportionate damage to the attack, and thus intends to retaliate. The third case is deliberate escalation, in which the effective and precise use of drones can play a role, which is why it can be an obvious tool for the attacking party to demonstrate power and intentionally widen the conflict (Woodhams and Borrie 2018). In the Libyan civil war, on one hand, drones were used as replacement tools, i.e. after the destruction of combat aircraft, and on the other, as such replacement tools, they also played a role in widening the conflict per the foreign policy interests of the opposing parties.

**The "Drone War" in Libya**

The arrival of Chinese-made Wing Loong 1 and 2 medium-altitude, long-endurance (MALE) drones in Libya in 2016 marked a significant change in the LNA’s military capabilities (United Nations 2019, 33). These drones were first deployed in the battle for Derna in eastern Libya, where they played a crucial role in the successful attacks by forces allied with General Khalifa Haftar against units of the Mujahideen Shura Council (Pack and Pusztai 2020, 5). The Chinese drones, supplied by the United Arab Emirates and operated by UAE personnel, were launched from the Al Khadim airbase in eastern Libya (United Nations 2019, 126). The Wing Loong drones, with a combat range of 1,500 km, were capable of delivering precision-guided missiles and bombs. The military reliance on these Chinese drones by the LNA changed in December 2019, when Turkish President Recep Tayyip Erdogan announced increased military support for the GNA led by Fayez al-Seraj (United Nations 2019, 32). This meant that, in addition to old helicopters and warplanes, both the GNA and LNA units continued to fight each other in the air with UAVs. In addition to the Chinese drones, the UAE also supported the LNA forces with Schiebel Camcopter S-100 rotary-wing UAVs and Iranian-made Mohajer-2 UAVs (Sprengel 2021, 21).

The GNA received Bayraktar TB2 and TAI Anka drones from Turkey, which were operated by Turkish personnel. These UAVs were delivered to Tripoli in May 2020, followed by deployments to Misrata and Mitiga. Additionally, the GNA utilized three Israeli Orbiter-3 unmanned aerial systems (UAS) manufactured by Aeronautics. The Orbiter-3, capable of sustained flight for over seven hours, was employed for intelligence, surveillance, target acquisition, and reconnaissance (ISTAR) operations (United Nations 2019, 33-38). In contrast, the Wing Loong 2 drones supporting the LNA units were often modified with Thales data link systems and Israeli optics (Times Aerospace 2020). In April 2020, as General Haftar commenced his siege of Tripoli, initial assaults were conducted with warplanes. However, as aerial assets on both sides were progressively neutralized or rendered inoperative, the conflict transitioned into a "drone war." Both Bayraktar TB2 and Wing Loong 2 drones played pivotal roles in the ensuing engagements and attacks for control over Tripoli (Thomas 2020, 5-7).
As a result of the drones provided, Turkey played a significant role in enabling the counterattack against the Libyan National Army (LNA) that began in April 2020. This counteroffensive, known as Operation Peace Storm (OPS), saw the Government of National Accord (GNA) achieve substantial success in the siege of Tripoli, effectively pushing back LNA forces with Turkish support (Thomas 2020, 7). On June 6, 2020, the LNA initiated drone attacks on the city of Mitiga, destroying two Bayraktar TB2 drones. On July 25, 2020, a Bayraktar TB2 drone attacked and destroyed two Ilyushin Il-76 military transport aircraft at Al Jufra Air Base. Additionally, Bayraktar drones targeted and destroyed a hangar near the airbase, which was utilized by LNA units as a logistics base and staging area. On July 30, 2020, an Orbiter-3 UAV operated by the GNA was destroyed near Aziziyyah. Subsequently, on August 3, 2020, Wing Loong 2 drones, operating under the LNA, were destroyed by GNA drones and air defence systems during clashes in Misrata. On August 4, 2020, a Wing Loong 2 drone operated by the United Arab Emirates was downed by a Turkish anti-drone system over Misrata (Times Aerospace 2020).

The Turkish Air Force operated a Boeing E-7T Wedgetail airborne early warning and control (AEW&C) aircraft off the coast of Libya to provide signals intelligence (SIGINT) capabilities to Turkish ground forces. These surveillance aircraft were instrumental in monitoring Wing Loong’s reconnaissance activities, enabling Turkish anti-drone systems to be deployed effectively to disrupt and disable enemy UAVs (Bilgrami 2020, 3). To counter enemy drones, the Turkish forces employed Aselsan IHASAVAR anti-drone jamming devices. On 6 August 2020, the LNA destroyed an aircraft used by the GNA with a Wing Loong 2 drone. The aircraft, arriving from Ankara to the Misrata air base, was carrying ammunition and UAVs when it was hit. The LNA conducted further drone attacks on Misrata on August 15 and 16, 2020. The United Nations Support Mission in Libya (UNSMIL) condemned these attacks due to significant destruction at the airport and the resultant civilian casualties. On August 27, 2020, Turkey delivered additional Bayraktars to Libya to stop the gap due to the destroyed Bayraktars (Times Aerospace 2020).

The Bayraktar TB2 is one of the most successful unmanned aerial vehicles designed and manufactured in Turkey. Istanbul-based company Baykar Makina, having produced the Bayraktar TB1 prototype in 2005, developed the TB2 variant for the Turkish military, which made its maiden flight in June 2009. The first TB2 drones were delivered in 2014. They were initially used in an intelligence-surveillance-reconnaissance (ISR) role by the Turkish military, which began testing the armed version in December 2015, with the first live deployment in the summer of 2016 (Tearline 2022). The TB2 drones are equipped with the L3 Wescam MX-15D targeting and designating system, which facilitates the distinction between armed units and civilian. To address weight constraints, Roketsan designed the Mini Smart Munition (MAM), including the laser-guided MAM-L Smart Micro Munition, which is mounted on the underside of the drone. The TB2 is also capable of carrying UMTAMS missiles. The Bayraktar TB2 has an endurance of 24 hours without weapons and 14 hours when fully armed. It has a cruise speed of 130 km/h, a flight ceiling of 7,300 m, and a communication range of 150 km. The drone has a wingspan of 12 m, a maximum takeoff weight of 650 kg, and a payload capacity of 55 kg. Among the states involved in the Libyan civil war, Qatar, the United Arab Emirates and Saudi Arabia subsequently acquired Bayraktar TB2 drones (Péria-Peigné 2023, 2-10).

Chinese military products used by the LNA are garnering increasing interest in the Middle East and North African markets. The Wing Loong 2 is the most sought-after Chinese unmanned aerial
vehicle, and its two biggest customers are Saudi Arabia and the UAE. The UAE has significantly modified the Wing Loong 2s for military operations in Libya. The drones were equipped with a Thales system, and the electro-optics were also modified. The Wing Loong 2 is an advanced iteration of the Wing Loong 1, designed and manufactured in China by the Aviation Industry Corporation of China (AVIC). The company unveiled the Wing Loong 2 concept at the Aviation Expo China in Beijing in September 2015. The Wing Loong 2 prototype was first showcased at the Air Show China held in Zhuhai from November 1 to 6, 2016. Three hardpoints are attached to each wing of the drone, which is suitable for carrying bombs, rockets or air-to-surface missiles (Army Recognition 2023). In the front part of the fuselage, a satellite communication antenna is placed, which allows data transmission between the drone and the command and control points on the ground. The drone can fly for 20 hours, its maximum speed is 370 km/h, and its range is 1,500 km (Oliver 2020). On the Libyan battlefield, the Wing Loong’s major advantage over the Bayraktar TB2 drones was that the former used satellite navigation while the latter used radio navigation, which played an important role in terms of range (Airforce Technology 2021).

**Some Lessons from the "Drone War" in Libya**

As previously noted, the Bayraktar TB2 drones, supplied by Turkey to the GNA, demonstrated an operational radius of approximately 150 kilometres. This range could be augmented through the establishment of relay stations and ground control centres. GNA units strategically positioned such stations in Tripoli, Misrata and Jurfa. The primary utilization of Bayraktar TB2 drones by the GNA was for reconnaissance missions and offensive manoeuvres aimed at neutralizing ground targets, including the disruption of LNA ground control facilities. Conversely, the Chinese Wing Long 1 and Wing Long 2 systems, employed by the LNA, were procured by the United Arab Emirates and deployed within North Africa. These systems predominantly engaged in combat operations in Tripoli and Misrata, operating as part of broader air support endeavours (United Nations 2019, 33-34).

According to United Nations estimates, the number of drone deployments in the Libyan conflict exceeded a thousand. According to the UN assessment, the drones used in Libya were mainly used for ISR (Intelligence Surveillance & Reconnaissance) tasks but also participated in several strike missions (e.g. against air defence systems and ground targets). According to the United Nations assessment, the use of UAVs has resulted in civilian casualties in several cases. This can be partly attributed to the fact that the UAVs were used in some cases for air support operations (Close air support - CAS), which in several cases took place in urban environments (Raghavan 2019).

One of the important elements influencing the outcome of the fighting in Libya was the use of MALE UAV systems and drone warfare through them. Drone warfare was characterized by the following elements. The drone systems used in the conflict were either entrusted to the battlefield groups directly involved in the conflict or operated instead by their personnel from the sending state. In Libya, various actors used several elements of *hybrid warfare*, of which the use of drones became the most dominant. A problem for each of the opposing parties was that they each had a limited number of UAVs at their disposal, which limited their deployment capacity and the available combat and warfare objectives. As a result of the drone attacks, the ground forces increasingly used different camouflages and tried to hide. Both the LNA and the GNA attacked each other’s UAV facilities.
and supporting infrastructure (Lund 2022, 20-30). Based on the experience of the Libyan conflict it is established that modern wars and conflicts are fought on the battlefield with combat and recon drones, electronic jamming systems and radars. To successfully fight such wars, Turkey has developed an advanced military-industrial infrastructure to meet the needs of modern warfare. This technical background was also tested well in the Libyan civil war, as we saw in the case of the GNA counterattack following the siege of Tripoli, where Turkish support played an important role. Turkey has highly qualified military experts who, in addition to planning, were at the forefront of training, consulting and developing drone warfare in the Libyan war (Lund 2022, 50).

In the drone war of the Libyan conflict, Turkey had a key technological advantage over the United Arab Emirates. Turkey’s medium-altitude, long-endurance (MALE) armed drones TB-2 and TAI Anka dealt heavy blows to Haftar’s forces, giving the GNA the upper hand on the battlefield. The Anka-S, which was already capable of satellite-controlled attacks, also proved to be effective in the Libyan theatre alongside the TB2. The force superiority was further enhanced by the deployment of a small number of advanced high-altitude, long-endurance (HALE) Turkish drones Akinci and Aksungur capable of carrying large payloads. To protect against drones of the LNA, Turkey deployed MIM-23 Hawk, Hisar short-range SAM and Korkut anti-aircraft guns in Libya, mainly to protect the airspace of Tripoli (United Nations 2019, 29). KORAL radar jammers, electronic warfare systems delivered by Turkey to Libya, were used to jam Haftar’s Pantsir air defence system. Turkey has also deployed Hisar-A short-range and Hisar-O medium-range air defence systems to Libya to protect its own units and military equipment (Lund 2022, 51). Turkey has also deployed Gabya-class naval frigates off the coast of Libya to provide air and sea support to GNA forces along the coast between Tripoli and Sabratha. On April 1, 2020, Turkish frigates fired surface-to-air missiles at LNA drones (United Nations 2021, 16). Turkey also deployed its own Boeing E-7T aircraft to conduct signal intelligence for the Turkish ground forces (Bilgrami 2020, 3).

Ankara’s military support for the GNA’s successful military operations strengthened Turkey’s diplomatic ties with Libya’s key neighbours Algeria and Tunisia. With both states, Turkey concluded military industrial agreements, according to which Algeria acquired Bayraktar TB2 and TAI Anka drones, while Tunisia acquired TAI Anka-S drones from Ankara. Morocco opted for Turkish drones following their performance in Libya. Turkey’s rise as a drone power has become a source of regional and global prestige (Soyaltin-Colella and Demiryol, 2023, 735). The Turkish military intervention essentially reversed the military situation in Libya. As a result, Haftar and his foreign supporters proposed a ceasefire and announced a de-escalation of military activities (United Nations 2022, 11).

Conclusion

The study attempted to contribute to the study of ‘new types’ of technologies such as UAVs and examined the role and significance of these technologies in shaping regional power dynamics, namely the Libyan civil war. The research especially showed how a regional actor (Turkey) and its technological capabilities, namely UAVs, were able to determine the outcome of the Libyan conflict, which also had an impact on regional power dynamics. Due to the actual nature of the examined topic, it may also be at the centre of the security policy discourse shortly, and this may not only be due to the rapid spread of Turkish UAVs, but also the continuous development of drone warfare may
identify new areas of research. In the study, the authors demonstrated that drones can be used for many areas of activity in the event of a military conflict, such as for surveillance, intelligence, destruction, target designation and logistical support. Analysts estimate that over the next 10 years, nearly 80,000 surveillance drones and 2,000 combat drones will be purchased worldwide by state and non-state actors, and the drone export market will continue to grow (Agarwala 2023, 88).

The study proved that Turkish regional foreign policy thinking has changed. Instead of a "zero-problem policy" with its neighbours, Ankara began to pursue an expansive foreign policy relying on hard power capabilities. In this process, Turkish drone warfare was not only successful in asserting strategic interests, Turkey not only wanted to protect its economic interests but also created an opportunity to increase its presence in the MENA region. It has also been proven in the Libyan conflict that the deployment of drones and precision systems, which may be delivered to proxy forces, can change the balance of power on the battlefield. In Libya, Ankara’s military objective was to push back Khalifa Haftar and the LNA. Turkey achieved this goal after its military intervention in 2020.

The study covered in detail that as of January 2020, Turkey began delivering Bayraktar TB2 drones to the GNA. These Turkish assets neutralized the Libyan LNA’s air superiority and allowed the GNA to throw back the LNA’s offensive against Tripoli and launch a counterattack. While Turkey lost a significant number of TB2 drones in Libya, these losses were significantly reduced after Turkey established multi-layered air defences in western Libya and established an effective unified command of the GNA and allied militias. This concerted effort, which included air defence, coordination between infantry units, and the use of drones and other assets, allowed the GNA to effectively push back the LNA’s drone-supported offensive around Tripoli in the summer of 2020. Because of the resulting stalemate, political processes came to the fore again.

From Libya’s example, we have seen that Turkey, as a regional power striving for a global role, can shape regional power dynamics to a certain extent. This also showed that capabilities such as UAVs can be used to achieve military and, where appropriate, strategic goals, which enables the user to shape foreign policy and geopolitical processes. UAVs have performed well in the Libyan battles, as evidenced by the fact that several countries have expressed interest in purchasing Turkish technology.

As a further research aspect, I assess the investigation of what geopolitical consequences there may be when countries such as Turkey not only use their developed drones to assert their foreign policy interests but also export the UAVs to other states, thereby indirectly supporting their geopolitical interests. Although Turkish UAVs have achieved significant results in Libya, the mere application of such technologies alone is not sufficient to rearrange the regional balance of power. During the research, it was also confirmed that Turkey, as a regional and rising UAV power, can bring about changes in warfare and influence the military balance in favour through drone warfare. During the research, it was established that the study of changes in the balance of power is a complex task both at the international and regional levels. Further research should be carried out to understand how the development of drones may affect the future of warfare and what may involve the stability of the international system and global security.
References


