Tampere University

Tatu Strengell

ORGANIZATIONAL ADAPTATION OF MINUSMA 2017-2022:

Complex Adaptive System Approach to a Peace Operation

Faculty of Management and Business

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Abstract

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Changing global conflict landscape has imposed new challenges for UN peace operations. UN peace operations are increasingly deployed in contexts of civil conflicts which are characterized by various interrelated challenges, such as the usage of asymmetric warfare tactics, non-state armed actors, and organized crime. Furthermore, many contemporary UN peace operations are deployed to volatile security environments with little to no peace to keep. Hence, UN peace operations must constantly adapt to the implications of these complex security environments.

This thesis attempts to understand the adaptation of the United Nations Multidimensional Integrated Stabilization Mission in Mali (MINUSMA). Drawing on complexity sciences, this thesis approaches the peace operation as a complex adaptive system which organizes its conduct to changes in its operational environment as well as indigenous operational pressures. To examine the adaptation of a peace operation, this thesis conducts a theory-testing process tracing which involves the evaluation of various UN mission reports, internal reviews, and lessons learned documents.

The findings of this study suggest that MINUSMA have adapted at strategic and operational levels to improve its contingents' security and safety. At the strategic level, the Security Council extended MINUSMA's mandate to protect civilians in central Mali in addition to Northern regions. Secondly, the mission enhanced its knowledge-based management through A4P and A4P+ initiatives. MINUSMA also increased the troop levels as well as operational resources. At the operational level, the troops adopted an increasingly 'proactive' posture to identify and address threats to both civilians and the UN personnel. Furthermore, the mission also reconfigured its troops, generated new capabilities, enhanced its external communications, and improved medical support to better respond to the challenges security environment and operational pressures.

Keywords: peacekeeping, complexity sciences, military adaptation, process-tracing

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1. Introduction

Peace operations are amongst the most visible and significant endeavors carried out by the United Nations (UN). Over 100 000 peacekeepers are deployed in different missions across the world with varying type and scope (Bellamy & Hunt, 2015). For example, the UN conducts traditional military observer missions in the Middle East, Western Sahara and the border between India and Pakistan. The UN has also supported in state-building activities in South Sudan and East Timor (Aoi, et al., 2017). Finally, it has mandated missions to protect civilians in prolonged conflicts, such as the operations in Côte d'Ivoire and the Democratic Republic of Congo. The centrality of the peace operations can be also viewed in financial terms: the UN General Assembly agreed on a $7.87 billion budget for peace operations for the fiscal year 2016-2017 (Peters, 2019). Hence, the importance of peacekeeping among its member states is evident.

Modern UN peace operations impose a stark contrast to what is considered traditional peacekeeping missions. In Mali and the Democratic Republic of Congo, the UN troops support the local governments against violent extremists while in the Central African Republic, South Sudan and Sudan, the UN is mandated to protect civilians in the absence of peace agreements (Aoi, et al., 2017). These missions highlight the considerable change in peacekeeping since the first military observer mission was deployed in the Middle East in the 1950s'. Within the past sixty years, peace operations have transformed from a neutral third-party intervention between conflict parties towards supervising comprehensive peace agreements (St-Pierre, 2008). Modern peace operations involve multidimensional design with civilian, police and military capabilities. They cooperate within a wide network of regional and international organizations, governments, and NGOs (Hunt, 2020). Today's peace operations must also aim to appreciate the local context and undertake various tasks, such as security, governance, peace monitoring, elections, humanitarian assistance, and the protection of civilians (St-Pierre, 2008). In short, modern peace operations are increasingly complex undertakings.

This is a result of changing global conflict landscape which has imposed new challenges for the UN peace operations. UN peace operations are increasingly addressing civil conflicts which are characterized by various interrelated challenges which involve the usage of asymmetric warfare tactics, non-state armed actors, and organized crime (Dupuy & Rustad, 2018). Furthermore, many contemporary UN peace operations are deployed to volatile security environments with little to no

peace to keep (Peters, 2019). Hence, UN peace operations must constantly adapt to the implications of the new security environments.

There exists a considerable amount of literature that examines how, why, and when military organizations have adapted in recent armed conflicts (i.e Serena, 2011; Farrell, 2010; Barno & Bensahel, 2020). However, it is far less studied how the operational environment shapes peace operations which serves different purpose than a military mission. Various aspects of peace operations diverge from military operations. First, their purpose is to end violence, not to wage war. Secondly, peace operations employ a comprehensive approach to conflicts - it involves also civilian aspects of peacebuilding and peacekeeping in the operation (i.e Michael & Ben-Ari, 2011). Furthermore, peace operations are based on bedrock principles of consent, limited use of force and impartiality which affects their operational mandate (Aoi, et al., 2017). These organizational goals may be reflected in their divergent structure, modes of operation and essentially the use of force.

Complexity sciences offer a potentially fruitful approach to better understand the complexities of modern conflict environments, especially in an African context. For example, Lekunze (2019, p. 32) has critiqued contemporary approaches to security studies applying insufficiently in African contexts. According to him, traditional approaches to security studies tend to analyse security as an aggregate outcome of the actions of individual security actors (Lekunze, 2019, 31). Nonetheless, social, and cultural complexities of African societies require a more nuanced understanding which can not be fully achieved by reducing phenomena into isolated cause-and-effect relationships (Lekunze, 2019, 42) Thus, the traditional 'Newtonian' paradigm of scientific method must be rejected in order to reach a holistic understanding of local-, and global level interactions within a complex operational environment. Therefore, this thesis employs the complexity paradigm to broaden traditional approaches to security and potentially reveal new insights about an organizational adaptation of the peace operation.

This thesis investigates the adaptation of the United Nations Multidimensional Integrated Stabilization Mission in Mali (MINUSMA). Drawing on complexity sciences, this research examines the adaptation of a peace operation in a complex operational environment. This study adopts an organizational perspective which views the peace operation as a complex system that adapts to its environment. By examining causal mechanisms of emergence and self-organization proposed by complexity theory, this study aims to provide a detailed examination of how the UN

peace operation organization has adapted over time to different operational-, and environmental changes. Hence, this thesis answers the following research question:

How has the MINUSMA operation adapted on strategic and operational levels to increase the security and safety of its peacekeepers?

In order to answer the primary research question, the mission's adaptation on the strategic-, and operational levels will be analysed. The study focuses on the military component of the mission and includes only the security and safety of the military personnel. The findings are expected to indicate to what extent the military component of the peace operation in Mali has adapted to the threats imposed by the contingent security environment. Thus, the research does not cover the civilian undertakings of the multidimensional mission, such as community policing, governance development, peacebuilding, or humanitarian aid. The research question also excludes the detailed examination of the mission's performance and ability to implement its mandate. Hence, this thesis does not aim to provide a diagnosis of organizational performance nor a concrete assessment of the operation's successes or failures.

This thesis will use complexity sciences as the theoretical approach for analysing the adaptation of the peace operation. The key concepts of complexity approach include emergence, self-organization and adaptation which are applied to the context of MINUSMA (Colchester, 2016). In addition, the key concepts are integrated by analysing how the causal mechanisms of emergency and self-organization explain the organizational adaptation of MINUSMA. As the purpose of the study is to assess how the theorized mechanisms of emergence and self-organization could facilitate the organizational adaptation of MINUSMA in practice, the organizational adaptation is measured by analysing public UN documents about operational developments of MINUSMA between 2017-2022. This brings forth the following sub-questions of this thesis:

1. How do the public UN documents describe the organizational adaptation of MINUSMA between 2017-2022?

2. How can the causal mechanisms of emergence and self-organization explain the organizational adaptation of MINUSMA?

The first chapter introduces the changing conflict landscape and examines the UN initiatives to reform peace operations. Furthermore, scholarly literature on organizational adaptation and adaptation in the context of military organizations will be discussed. This chapter aims to define

the key concepts of this study and lay out a theoretical foundation to investigate organizational adaptation. The second chapter introduces complexity sciences as the research paradigm which sets out the theoretical framework for this thesis. The third chapter outlines the methodological choices of this research as well as justifies the case selection, data collection, and limitations of this study. The fourth chapter introduces the background of the Malian civil conflict and the history of MINUSMA prior to 2017. In the fifth chapter, I evaluate the observations within the theoretical framework and assess how the theorized causal mechanisms have contributed to the adaptation of MINUSMA. The sixth chapter provides a reflection on the inferential weight of the observations as well as alternative hypotheses on MINUSMA's adaptation. Finally, the concluding chapter summarizes the findings and identifies the potential areas for future research.

2. Changing Global Context of the UN Peace Operations

Peace operations are amongst the most central instruments for the international community to intervene in atrocities and armed conflicts. They aim to induce political change by decreasing violence and addressing different root causes of the conflict to create conditions for sustainable peace. This chapter describes the evolving conflict landscape since the Cold War and the development of UN peace operations in the changing world. Furthermore, this chapter defines different types of peace operations that are referred to throughout this thesis.

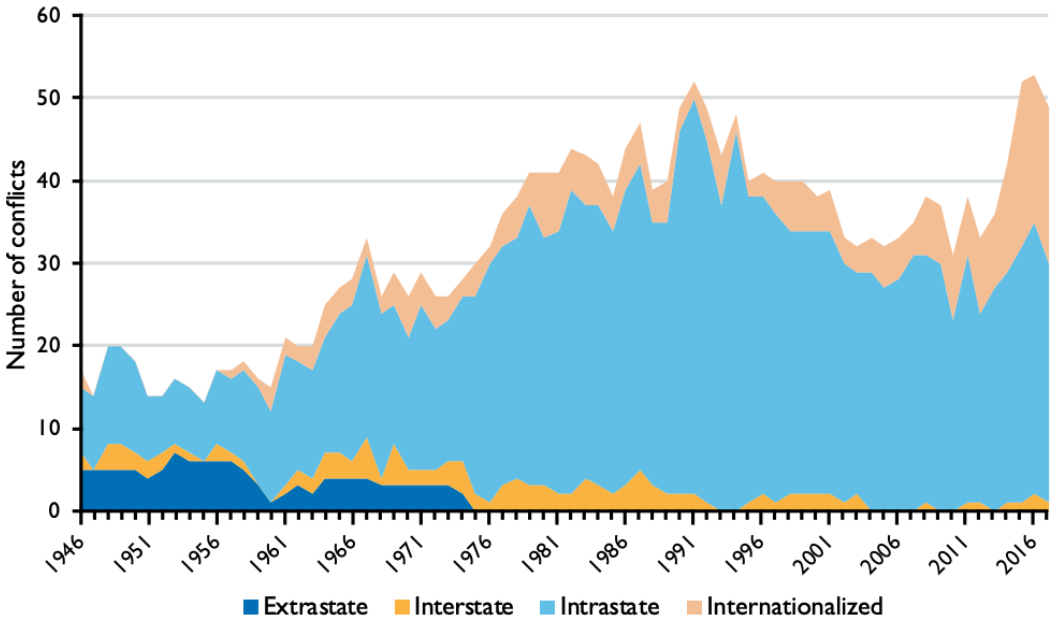
2.1 From Peacekeeping towards Multidimensional Peace Operations

The UN peace operations have adapted to the evolving geopolitical landscape and changes in conflict environments. Consequently, their complexity has been gradually increasing. The first UN peacekeeping missions in the early 1950s were established to monitor a cease-fire agreement in inter-state conflicts (Aoi, et al., 2017). These 'traditional' peacekeeping operations aimed for creating a demilitarized zone between the belligerents, thus reducing the probability of further escalation (Aoi, et al., 2017). As Peters (2020, 27) argue, the early peacekeeping operations were not intended to resolve conflicts but rather to manage them. The limited role of the UN operations was meant to avoid a direct confrontation between the superpowers that acted bilaterally in the Global South during the Cold War. To limit the UN military role in interstate conflicts, the UN peacekeeping doctrine was developed on core principles of consent of host nations, limited use of force and impartiality that became bedrock principles of peace operations (Aoi, et al., 2017).

The post-Cold War era presented a significant change in how the UN responded to conflicts. There was increased space for cooperation Security Council but also the superpowers had less interest in directly intervening in conflicts in the Global South or addressing problems bilaterally (Peters, 2019). They rather handed these tasks over to the United Nations which led to a stark increase in international peacekeeping missions across the world. As Peters (2019, p. 31) remarks, 58 out of 71 UN peace operations have been deployed after 1988. Many of these new missions took an increasingly multidimensional approach to address problems that did not involve military means. For example, peacekeeping operations in El Salvador, Cambodia and Mozambique were primarily involved with monitoring non-military activities, such as reporting human rights abuses, observing elections, or establishing rule of law (Peters, 2019). Peacekeepers were no longer deployed as military tasks within the conflict, but they also involved civilian-, and police components.

Since the end of the Cold War, the nature of conflicts has become increasingly complex. Since the early 1990s, macro-level trends in warfare include a decline in interstate wars, steady rise of intrastate conflicts and internationalization of conflicts (Dupuy & Rustad, 2018, p. 2). As Figure 2.1 demonstrate, most of today's conflicts are civil wars. In addition to conventional military threats, the missions are deployed in contexts with various interrelated non-traditional security challenges, such as terrorism, violent extremism, and transnational organized crime (i.e Smit, 2017; van der Lijn, 2018).

Figure 2.1. Number of armed conflicts by type of conflict, 1946–2017. Data source: UCDP/PRIO database (Dupuy & Rustad, 2018, p. 2).



According to Day (N.d), intractability linked to modern conflicts can be traced to three macro-level changes in the post-Cold War security landscape. First, the growth of transnational organized crime can be linked to decreased proxy support by the superpowers to Global South, which enabled armed groups to build transnational networks for illicit trafficking. Illicit trafficking constitutes the main source of funding for many armed groups which lowers their incentives to participate in peace processes (Day, N.d). Organized crime drives many civil conflicts and undermines the state authority and governing institutions. Secondly, increasing involvement of foreign or proxy forces

in civil wars contribute to duration of civil conflicts as well as increased civilian casualties (Day, N.d). Third, the increased role of extremist groups, especially jihadist networks, has added another layer of complexity to civil wars (Day, N.d). Their maximalist demands and failure to commit to basic human rights not only challenge peace operations but also impede the peace processes.

New types of conflict environments have presented a paradigm change for Western militaries attempting to enforce and keep peace in civil wars. The new types of peace operations involved numerous challenges and ambiguities that differentiate them from conventional warfighting. The late 1990s' peace operations involved much-expanded scope, less strategic direction, political and cultural diversity in the conflict, involvement of various local and international actors and difficulties to apply rules of engagement (Klep & Winslow, 1999). To understand the ambiguities of civil wars, numerous scholars have attempted to conceptualize the challenges that Western militaries encountered.

According to Kaldor (2013), new types of conflicts stem from the changes in Westphalian order, especially in contexts of eroding state sovereignty. Kaldor (2013, p. 2-3) argues that many post-Cold War intrastate conflicts, so-called 'New Wars', are characterized by blurring lines between state and non-state actors, identity-fueled motives to wage war and asymmetric warfare tactics. Similarly, Smith (2007) describes a transformation from interstate 'industrial wars' towards 'war amongst people', where the traditional Western concepts of war are less efficient. According to Smith (2007, p. 37), characteristics of 'war amongst people' include timeless nature of conflict, more malleable objectives to wage war, fighting amongst people rather than armies both at local and international levels, innovative use for old weapons, involving mostly non-state belligerents without uniforms, and "fighting so as not to lose the force, rather than fighting by using the force at any cost to achieve the aim". Although conceptualizations of Smith's (2007) and Kaldor's (2013) arguments are widely debated, they shed light on new realities of contemporary conflicts.

The changing trends in war have also challenged the traditional peacekeeping paradigm which was designed to monitor a cease-fire agreement between two states during the Cold War (de Coning, 2019). After the UN failure to protect civilians in Somalia, Rwanda, and Bosnia in the 1990s, doctrines of peacekeeping have changed towards more 'robust' peace operations to protect civilians with a wider mandate to use force (Bellamy & Hunt, 2015). Hence, the peacekeeping paradigm has been transforming from monitoring cease-fire treaties between nation-states towards supporting the implementation of comprehensive peace agreements in intrastate conflicts (de

Coning, 2019). The increasing scope of peace operations involves a wider array of tasks, involving military, police, humanitarian, political, electoral, and human rights components (Howard, 2008).

The complexities of intrastate conflicts and shifts in global order have changed demands for peace operations which are required multidimensionality. Peace operations are deployed in a security environment with various intertwined challenges, such as asymmetric and symmetric threats, poor governance, international terrorism, and organized crime (Karlsrud, 2017). Most of the contemporary peace operations take place in the context of intra-state conflicts in areas where there is little to no peace to keep (Kjeksrud & Vermeij, 2017). Especially, non-state armed groups are redefining the rules of modern conflicts through their use of modern technology in combat activities, recruitment, and external communication (Peters, 2019). Against this backdrop, also the mandates of UN peacekeeping operations have been subject to change as missions have undertaken new tasks.

The UN Peacekeeping Capstone Doctrine of 2008, an underpinning doctrine for the planning of UN operations, defines different peace operations as the following (United Nations, DPKO & DFS, 2008, p. 18):

- *"Peacekeeping* is a technique designed to preserve peace where fighting has halted. is a technique designed to preserve the peace, however fragile, where fighting has been halted, and to assist in implementing agreements achieved by the peacemakers. Over the years, peacekeeping has evolved from a primarily military model of observing cease-fires and the separation of forces after inter-state wars, to incorporate a complex model of many elements – military, police and civilian – working together to help lay the foundations for sustainable peace."
- *"Peace enforcement* involves the application, with the authorization of the Security Council, of a range of coercive measures, including the use of military force. Such actions are authorized to restore international peace and security in situations where the Security Council has determined the existence of a threat to the peace, breach of the peace or act of aggression. The Security Council may utilize, where appropriate, regional organizations and agencies for enforcement action under its authority."
- *"Peacebuilding* involves a range of measures targeted to reduce the risk of lapsing or relapsing into conflict by strengthening national capacities at all levels for conflict management, and to lay the foundation for sustainable peace and development."

In addition, the UN peace operations in Mali, the Central African Republic, and the DRC represent a new type of missions with mandated tasks of *stabilization*. While the term does not have a universally agreed definition, it seems to fall in between peacekeeping and peace enforcement mandates. For example, The British Stabilization Unit defines stabilization as "an approach which is designed to protect and promote legitimate political authority, using a combination of integrated civilian and military actions to reduce violence, re-establish security and prepare for longer-term recovery by building an enabling environment for structural stability" (Gilder, 2019, p. 50).

According to de Coning (2017), stabilization is essentially a state-building instrument that combines characteristics of counterinsurgency and peacekeeping operations. Stabilization missions primarily use military means to neutralize potential spoilers to a conflict (Aoi, et al., 2017). What separates it from peace enforcement is that stabilization missions are not deployed to 'neutralize' the adversary but rather focus on the protection of civilians, even with projection of force when necessary (Karlsrud, 2015). However, lack of a clear definition of the concept makes the practice of stabilization missions a 'grey area' between the spectrum of peacekeeping and peace enforcement. As Karlsrud (2015) remarks, there is a big difference between using temporally a military force to protect civilians from harm and effectively mandating warfighting against terrorist groups.

The new types of missions have entrenched what is considered peacekeeping. The traditional UN peacekeeping principles of consent, impartiality, and minimum use of force were developed specifically to limit the UN military role in interstate conflicts (Richmond, 2014). However, in the Democratic Republic of the Congo (DRC) and Mali, the UN peacekeepers are supporting local governments against violent non-state actors whereas in South Sudan, Darfur, and Central African Republic the UN operation is protecting civilians without effective peace agreement (Aoi, et al., 2017). These new types of UN peace operations have significantly challenged these bedrock peacekeeping principles.

New types of peace operations are resorting to unprecedented means which are extending the notion of UN peacekeeping. Aio et al. (2017) posit that volatile security environments have led to more robust operational mandates to project force. This involves, for example, offensive operations, usage of weapons systems, artillery fire, adopting intelligence capabilities, and special forces capabilities (Aoi, et al., 2017). With 'robust' mandates to project force, the UN troops may

become belligerent according to the laws of armed conflict (Kjeksrud & Vermeij, 2017). This appears to contradict the principle of minimum use of force.

Also, principles of consent and impartiality can be seen as problematic in light of contemporary UN peace operations that involve stabilization mandates. For example, the UN peace operations tend to have closer links to host-government who give their formal consent for the operation but disregard opposition (Kjeksrud & Vermeij, 2017). Kjeksrud and Vermeij (2017) also argue that the UN system is inherently biased towards extending state institutions rather than empowering the local governance system. Proximity to the host government might impede the capacity to compromise with different conflict parties. Furthermore, insurgent or opposition armed groups might not consent to the UN presence which makes the UN troops *de facto* conflict party. This means that the UN peacekeepers that use force against opponents of the host government might be considered partial and become targets for armed groups. This may affect the security of the UN personnel and the implementation of the mission's mandate.

2.2 UN Initiatives to Improve Peace Operations

Following a series of high-profile failures to protect civilians in Bosnia and Rwanda in the mid-1990s', the UN commissioned the Report of the Panel on United Nations Peace Operations (the Brahimi report) to address shortcomings of the UN peacekeeping operations (Peters, 2019). Published in 2000, it assessed the effectiveness of UN peacekeeping operations and provided several recommendations to address the existing shortcomings. The Brahimi report urged that peace operations should be authorized more robust mandate to use force for the protection of civilians and be provided with sufficient resources to prevent atrocities (Karlsrud, 2015). The Brahimi report also made a distinction between peacekeeping and peace enforcement operations and concluded that peacekeeping operations should only be deployed when there is peace to keep. The Brahimi report also stated that the UN should hold the core principles of peacekeeping while recognizing that the 'UN does not wage war" (Peters, 2019).

The Brahimi Report remarked that peacekeeping operations undertake more peacebuilding tasks which made their mandates more difficult to implement. For example, mandates of peace operations in Bosnia and Herzegovina, Haiti and Sierra Leone had been authorized to reform the rule of law and security sector along with traditional peacekeeping tasks (Peters, 2019). UN peace

operations focused also more on promoting the economic security, strengthening state institutions as well as establishing state legitimacy. Hence, Peters (2019) argues that UN peacekeeping was used as an instrument for broader statebuilding agenda.

The insights of Brahimi reports were presented in the 2008 UN Capstone Doctrine which provided a framework for planning, deployment and conduct of the UN peace operations. Capstone Doctrine clarifies the core principles of consent, impartiality, and limited use of force, that underpin the UN peace operations (United Nations, DPKO & DFS, 2008). Secondly, the Capstone Doctrine provided the aforementioned definitions for different peace operations of peacekeeping, peace enforcement, and peacebuilding which conveys underlying institutional assumptions over the spectrum of peace operations (Aoi, et al., 2017) Essentially, Aio et al (2020) claim that both Brahimi Report and subsequent Capstone Doctrine attempted to clarify what the UN peace operations could do and could not do.

Towards the 2010s, the global world order shifted from unipolar towards multipolar world order which had implications on the UN peace operations. Peter (2019) has described this century as one of *North–South rebalancing,* where the states of the global South are increasingly vocal on how peace operations should be organized. Secondly, the global order is transforming towards regional security organizations as providers of security that can respond to conflicts with more robust mandates, better equipment, and with higher legitimacy (Peters, 2019). This has had significant implications on how the UN approaches peace operations.

In 2014, Secretary-General Ban Ki-moon established the High-Level Independent Panel on UN Peace Operations (HIPPO) which aimed for mapping future directions for UN peace operations. The HIPPO report proposed four essential shifts for future peace operations: (1) politics must drive the design of peace operations, not military or technical engagements; (2) the UN missions should better take into account specificities of the situation; (3) the UN should strengthen the partnerships with regional organizations and national capacities and finally (4) the UN Secretariat must become more field-focused and UN peace operations must be more people-centered (United Nations, 2015). According to Peters (2019), these core recommendations reflect the changing nature of conflicts as well as North-South rebalancing. He argues that the first two recommendations can be seen as responses to volatile security environments of today's peace operations where bureaucratic and technical solutions have limited efficiency. On the other hand, the last two recommendations

can be seen as a response to concerns about local legitimacy. Analysis and recommendations have remained a valued framework in discourse over the UN operations.

HIPPO report also distinguished peace operations from counterterrorist operations by arguing that, "UN peacekeeping missions, due to their composition and character, are not suited to engage in military counter-terrorism operations. They lack the specific equipment, intelligence, logistics, capabilities, and specialized military preparation required, among other aspects" (United Nations, 2015, p. 31). This 'red line' of HIPPO creates a stark contrast in the practice of contemporary UN peace operations which are deployed in security environments where terrorist elements are increasingly present.

3. Literature Review: From Complicated to Complex

The chapter begins by defining concepts of a complexity taxonomy, especially focusing on *complex adaptive systems*. Complexity sciences can be deemed the appropriate paradigm to describe organizational adaptation because it is fundamentally concerned with change processes (Hunt, 2020). The paradigm can also address the myriad challenges imposed by complex operational environments - non-linearity and co-adaptive actors in modern conflicts. Therefore, complexity sciences will be a point of departure, "a metatheory", in which to understand the multifaceted armed conflict.

After defining the complexity sciences, this chapter proceeds to establish the analytical framework of this thesis which is used to analyze how MINUSMA has adapted to the implications of the complex operational environment. In this part, the complexity sciences approach will be used to build an analytical framework adjusted from Farrel's (2013) model of military adaptation. This ought to elucidate how MINUSMA has adapted to its operational environment.

3.1 An Overview of Complexity Theory

This chapter presents the conceptual outlook of the complexity theory, also known as complexity sciences. Complexity sciences are concerned with explaining the change in complex systems (Hunt, 2020). Similar to realist or constructivist approaches to security studies, complexity science is a paradigm with its own assumptions on reality (Harrison, 2006, p. 2). Complexity sciences view the social world as different systems with complex and non-linear interactions (Harrison, 2006, 1; Pycroft, & Bartollas, 2014, 1). An interrelated nature of these open systems constitutes the complexity sciences which aims to describe, explain, or formulate predictive theories based on "complex system theories" (Harrison, 2006, p. 2)

In practice, complexity sciences can be understood as the study of complex adaptive systems (CAS) (Raisio, 2010, p. 49). CASs can be found anywhere: ecosystems, a market economy, public sector organizations, human immune system, nations, or cities can be addressed from the systemic perspective (Raisio, 2010, 49; Harris, 2006, 3). Wilson, Holt, and Greenhalgh (2001) define complex adaptive systems (CAS) as "a collection of individual agents with freedom to act in ways that are not always totally predictable, and whose actions are interconnected so that the action of one part changes the context for other agents" (Wilson, et al., 2001, p. 685). Perhaps a more

illustrative definition for the CAS is provided by Zimmerman, Lindberg and Plsek (2008): "Complex" implies diversity - a great number of connections between variety of elements. "Adaptive" suggest the capacity to alter or change - the ability to learn from experience. The "things" in a CAS are independent agents" (Zimmerman, et al., 2008, p. 8). These complex systems interact with other open systems in their environment, influencing to continuous evolution of each others (Hunt, 2020).

Constituents of a CAS are in continuous interaction with each other and their environment which leads to its continuous process of co-evolution (Hunt, 2020). Self-organizing refers to reorganizing and self-regulation of a system in response to disturbance or perturbation, arising from local-level interactions. Hence, the studies of complexity normally focus on issues of adaptation, self-organization, and emergence within the CAS and its interactions. Colchester (2016, 17- 44) defines the properties of a CAS as the following:

- Emergence: "Lower level interactions of system that affect on higher level structure."
- Self-organization: "Global coordination or order out of the local level interactions of initially independent components."
- Adaptation: "Capability through which systems can change in response to some event within their environment."

Resulting from the CASs' adaptive, self-organizing and emergent properties, systemic behavior can not be reduced into linear cause-and-effect relationships. Rather than identifying individual cause-effect relationships, complexity sciences focus on feedback loops which emerge through its local-level interactions and generate self-organization (Raisio, 2010, p. 49). In peace operations, interconnected actors respond to changing dynamics through feedback loops (Hunt, 2020). Analyzing these cyclical direct- and indirect feedback loops can give insights how the system evolves to changes in its internal and external environment.

Key features of a CAS include open system type, decentralized control, autonomous agents, high connectivity, own history and non-linear interactions through feedback loops (Raisio, 2010, 49; Pycroft, & Bartollas, 2014, 25). CASs' are therefore open systems that consist of a diverse set of agents which are linked to their environment by interacting with other systems. The features of a CAS explain how its properties make the system 'more than its sum': small changes in one part of the system could lead to significant changes in another part of the system. Hence, systemic

behavior cannot be reduced into individual components, but a more holistic approach should be adopted in the analysis.

Comparing the complexity paradigm with the classical 'Newtonian' paradigm of scientific method reveals fundamental differences between the approaches. In a complicated system, outcomes are determined, and they can be predicted because the system is 'knowable' (Hunt, 2020). Complexity sciences reject this deterministic worldview of a 'clockwork universe' which depicts the world as a mechanical 'big machine' (Pycroft, & Bartollas, 2014, 19). Instead, complex systems view interrelations between their parts as dynamic and non-linear. This means that the systemic interrelations change over time and the transformation does not necessarily follow simple cause-effect logic (Hunt, 2020). Therefore, the outcomes of dynamic interactions remain undetermined and perhaps unexpected. Figure 1.1 compares the 'Newtonian' paradigm of analytical thinking and systems thinking through the lenses of complexity sciences.

Figure 3.1 Differences between analytical thinking and systemic thinking (Colcester, 2016, 22)

Newtonian thinking	**Systems thinking**
Sets	Functions
Components	Relations
Linear Causality	Nonlinear Feedback
Static Structure	Dynamic Processes

Complexity sciences do not offer a coherent theory, but rather a paradigm to understand the interactions within seemingly complex phenomena. In complexity vocabulary, systems thinking tries to understand the structural aspects within the system or highlight interconnections among actors (Colcester, 2016, 18). It frames the problem as an assemblage of components that change in response to interactions. As Hunter (2020, 138) remarks, complexity sciences focuses on change and reveals how seemingly insignificant actors have substantial influence over the course of effects.

Understanding the world through complexity lenses could help us understand complex problems also within the realm of social sciences. Numerous social sciences scholars have turned to

complexity thinking when addressing complex social issues, such as ethnic conflicts (Harrison, 2006), warfare (Hanén & Raisio, 2017) or Cameroonian security architecture (Lekunze, 2019). Nonetheless, complexity sciences have only been recently applied to theorize and analyse the UN peace operations. Hunt (2020) notes that these studies have focused to understand the global governance of the UN operations, the impacts of the UN peace operations, mechanisms of societal change, and how the UN peace operations operate. This research belongs to the latter body of literature as the aim of this research is to analyse how MINUSMA has adapted to its complex operating environment.

3.2 Organizational Design of UN Peace Operations

The term organization refers both to a noun and a verb. It can be defined as an 'action of putting into systematic form' as well as ‘an orderly structure that is in working order’ dependent upon ‘vital processes’ that are ‘systematically arranged’ (Burrell, 2022, p. 7). The term is also associated with a purpose towards a common goal or objective (Strati, 2000). Peace operations can arguably be both; they are organized actions of peacekeeping as well as an organization with an objective to induce peace into conflict environments. However, this study refers to peace operations as the noun throughout this thesis.

Peace operations are a unique type of international public administration. They are authorized by the UN Security Council and funded by the UN General Assembly as well as voluntary funding mechanisms by individual member states, agencies, and partners (Junk, 2012). Furthermore, peace operations are serving a specific purpose, such as to protect civilians, monitor a cease-fire, facilitate peace negotiations, or perform temporary administrative tasks (Junk, 2012). Hence, they are inherently international and multi-organizational arrangements where military organizations carry out tasks related to security and safety.

Although military organizations aim for specific goals like other organizations, they involve a number of unique characteristics. This combination of specific features makes them phenomena *sui generis*. The key characteristic of military organizations involves politics and society: they are essentially executing the decisions of politicians (Soeters, et al., 2010). As the 19th-century military theorist Carl von Clausewitz (1984) concludes: "War is only continuation of politics by other means". The centrality of politics reflects also on mandates and resources which are matters of political deliberation.

The second characteristic of military organizations is their permanency and lack of clear goals which are also present in other organizations of public administration. Soeters et al. (2010) argue that military organizations do not need to prove their existence in markets determined by supply and demand as their supply is security, a common good. Furthermore, militaries often must cope with a lack of clearly defined goals because the effectiveness of operations is difficult to measure (Soeters, et al., 2010). The fog of war often obscures the determination of which actions have led to the wanted outcomes.

Third, militaries are increasingly involved in multilateral operations which involves also a range of civilian capabilities and other military organizations. This is especially omnipresent in the UN peace operations where military, police and civilian actors undertake tasks related to security sector reform, humanitarian aid, human rights, governance, the rule of law and the economic sphere (Hunt, 2020). Hence, the militaries are not deployed to wage war but to carry out a wider set of tasks, such as monitoring peace agreements, stabilization of the country, and supporting other local- and international armed forces (Hunt, 2020). This can be far from the primary task of the organization, violence.

Military organizations are fundamentally apparatuses for organized violence. The ability and authority to use large-scale violence make military organizations unique (Soeters, et al., 2010). At least conceptually, the military is usually employed when there is no other way to resolve a conflict. As Clausewitz (1984) theorized: "War is an act of violence to compel our opponent to fulfil our will." Whether the motivation to use violence is the last resort to defend the country, to protect civilians or merely an act of hostility, violence remains at the core of military business.

Military organizations are also highly bureaucratic organizations with hierarchical power relations and stark division of labour. The hierarchical organizational structure reduces uncertainty in an unpredictable environment (Barno & Bensahel, 2020, p. 11). Established routines increase organizations' ability to make decisions and carry out tasks effectively in an ambivalent environment. According to Soeters et al. (2010), strict organizational rules and division of labor also help to prevent unacceptable behavior and thus contain the violence.

From a complexity perspective, a peace operation is an international instrument that aims to alter the behavior of a social system affected by conflict (de Coning, 2020) This thesis argues that the UN peace operations exhibit behavior of a CAS. According to Hunter (2020, p. 231), peace operations take place in “the context of a dense and globalised web of connections and

relationships between individuals, communities, institutions, nations and groups of nations". Multilateral peace operations comprise various stakeholders at international-, national-, and local levels. The bureaucratic level of peace operations works through the UN headquarters which involves the member states, committees of the UN Security Council, the General Assembly, and officials in the Secretariat and Department of Peace Operations. (Hunt, 2020). The operational level consists of uniformed and civilian peacekeepers on the ground managed by senior-, and middle-level managers. These peacekeeping units comprise multiple nationalities, strategic cultures and capabilities. Furthermore, comprehensive peace operations consist not only of military components but involves also civilian capabilities. For example, comprehensive crisis management involves police, military, the civilian component, and partnership with local civil society and the host government (Hunt, 2020). The interactions between different actors create vertical and horizontal relationships among the various stakeholders of a peace operation.

Comprehensive peace operations also perform a diverse set of tasks and activities by different actors of the mission. The military, police and civilian component work, in spheres of security, governance, rule of law, political issues, human rights, peacebuilding, and development issues (Hunt, 2020). Although each of the sectors is working towards specific goals, the comprehensive nature of the operation creates linkages across the sectors. For example, security sector reform, protection of civilians, disarmament, or reintegration of combatants requires multiagency cooperation (Hunt, 2020). This creates interconnections between different stakeholders. Furthermore, the UN peace operations are invariably part of global-level stabilization or peacebuilding architecture which means that the missions are oftentimes deployed alongside parallel forces in the same area (Hunt, 2020). For example, MINUSCA in Central African Republic was deployed together with the French *Sangaris* military operation that had a broader mandate for the use of force (Novosseloff & Tardy, 2020).

The high connectivity and intricate interdependencies of peace operations indicate that we can analyse its systemic behavior through positive and negative feedback loops. Positive feedback may amplify and change the behavior of the system at the strategic level, where the operational mandates are decided. For example, Hunt (2020) argues that the practice of protecting civilians has changed the nature of peace operations from top-down through positive feedback processes. It is estimated that positive feedback may occur as a result of environmental change or underperformance at the operational level. On the other hand, the negative feedback loop can be

observed in ineffective cooperation between the different constituents, inflexible standard operating procedures and doctrinal frameworks that control how the mandates are put into practice (Hunt, 2020).

A peace operation can be seen as an instrument that intervenes in the local social system that is about to escalate into a violent conflict. According to complexity theory, change does not occur gradually within a system but rather accumulates until a 'tipping point' is reached and then changes drastically within a short period of time (de Coning, 2020). This means that adaptation in a conflict environment does not necessarily correspond to the operational pressures or invested resources. Hence, de Coning (2020) suggests that we should rather recognize uncertainty as an intrinsic attribute of complex systems that can not be replicated through a pre-designed model.

3.3 Learning and Adaptation of Military Organizations

Adaptation can be seen as an essential attribute for any organization because the environment in which they operate is always changing. Nonetheless, there is no universally agreed definition for organizational adaptation. Fiol and Lyles (1985, 811) define organizational adaptation as "the ability to make incremental adjustments as a result of environmental changes, goal structure changes, or other changes". Farrell (2010, 569) describes adaptation in the military context as a "change to tactics, techniques and existing technologies to improve operational performance." In both definitions, organizational adaptation refers to decisions that an organization continuously make in response to changes in the operational environment. They also refer to the institutionalization of new insights into organizational structures. Serena (2011, 55) links organizational adaptation to learning and institutional capacity to change by defining it as a "process of learning and change". Hence, organizations can learn but without the organizational capacity to implement changes the adaptation is not likely to occur.

It is important to distinguish organizational learning from adaptation so that the terms are not used interchangeably. Organizational learning is a multi-level phenomenon that involves individual, group, and organizational-level cognitive processes (Bijlsma, et al., 2010). It refers to the "development of insights, knowledge, and associations between past actions, the effectiveness of those actions, and future actions" (Fiol & Lyles 1985, 811). Nonetheless, organizational learning is more than the sum of its members' learning. Fiol & Lyles (1985) argue that organizations develop their own organizational understandings and interpretation of their environment that are

disseminated to their members through shared meanings and norms. This creates common memories and associations that are shared by the members of an organization.

The organizational theory identifies three conditions for adaptation: external pressure; the opportunity or need to grow (or survive); and failure in an operation (Davidson, 2010, p. 12). Also, organizational culture shaping norms and beliefs prescribing the organizational conduct is viewed as a major factor in determining the success of learning (Graham & Zelikow, 1999). It shapes the formulation of operational choices and can explain why certain issues become more preferred rather than others. Thus, learning is likely to take place if it is consistent with the strategic culture. According to organizational theory, learning and change occur over time but they are influenced by existing routines and organizational capabilities (Graham & Zelikow, 1999, p. 221).

Davidson (2010) theorizes that organizational learning requires learning on the grassroots level, where the institutional need for change is recognized from the bottom-up. She claims that an individual takes actions within the organizational procedures to precipitate adaptation (Davidson, 2010). Such a process changes institutional memory, which is the "conventional wisdom of an organization about how to perform its tasks and missions" (Davidson, 2010, p. 14). The institutional memory socializes new members of the organization to best practices for organizational needs.

Individuals also play a role in organizational behavior, learning and adaptation. According to bureaucratic politics theory, organizational adaptation is a result of myriad bargaining games among different governmental actors and individuals (Davidson, 2010, p. 13). The bargaining games are played between individuals with competing interests, where they engage in negotiations that determine whether an issue is moved to an 'action channel' in which the organizational decisions are made (Graham & Zelikow, 1999). Hence, the decisions are done by "pulling and hauling", as a result of these negotiations. In these games, an individual's stance on an issue can be predicted from their hierarchical position in the organization. As Allison and Zelikow [TS1] (1999, p. 420) conclude: “Where You Stand Depends on Where You Sit”. The contribution of bureaucratic politics theory is to explain how the performance of individuals shapes organizational decision-making and military adaptation.

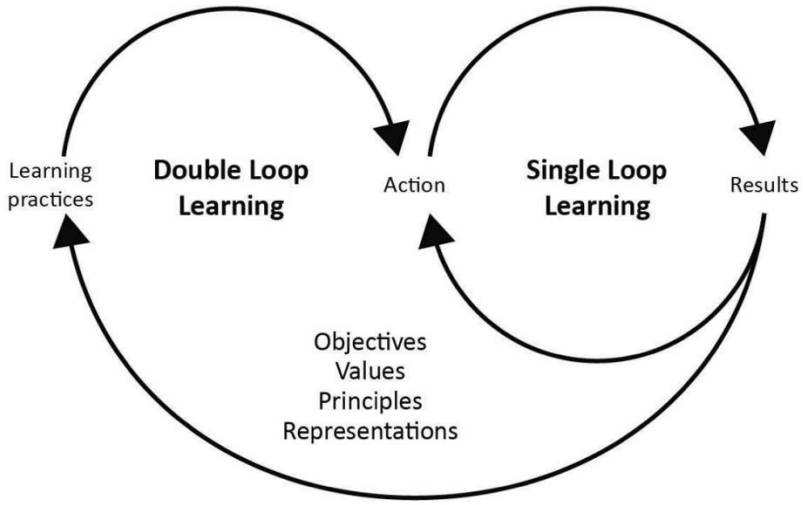
According to the bureaucratic politics model, all organizations seek to bolster their influence in order to maintain their core capabilities and missions, known as an organization's *essence* (Halperin, et al., 2007, p. 28). This essence is a vision that determines what

kinds of expertise, experience and knowledge the members of the organization ought to have to achieve its goals. Military leaders tend to promote their own vision for this essence (Davidson, 2010, p. 13). Thus, the bureaucratic politics model posits that leaders are likely to resist change unless it will not somehow bolster what they consider organizational essence. For example, the majority of the US Army officers agreed that their organization's essence is to maintain ground combat capabilities (Halperin, et al., 2007). According to Halperin et al. (2007, p. 32-33), the bureaucratic politics model can therefore explain why the Army is less interested in taking part in perhaps more peripheral roles, such as in advisory, air defence or counterinsurgency.

Organizational learning occurs in two levels. Single-loop learning refers to instrumental learning to cope with emerging issues without changing the underlying values of an organization (Argyris & Schön, 1978). Therefore, an organization modifies its behavior within its organizational norms in single-loop learning. According to Soeters (2020), single-loop learning is the dominant mode of action in modern organizations because an organization's performance regarding efficiency, quality and safety oftentimes determines effectiveness to achieve its goals. In the context of peace operations, Howard (2008, p. 14) distinguishes single-loop learning as learning *within* a peace operation. She theorizes that learning of individuals in the field enables military leaders to change operational conduct and organizational structures on the ground (Howard, 2008, p. 15).

According to Argyris & Schon (1978), double-loop learning involves modification of underlying organizational norms, assumptions, objectives, or principles. It means that an organization aims to resolve the failure by creating new norms and values in order to enhance its organizational performance. Within the context of military organization, double-loop learning could result in a change in mandates, for example. Howard (2008) argues that double-loop learning in a peace operation happens at the UN headquarters. This involves adjustments in organizational means, structures, and goals to better reflect the new understandings of problems (Howard, 2008, p. 19). Organizational learning capacity is thus dependent on both single-, and double-loop learning. The mechanism is illustrated below in Figure 3.3.

Figure 3.3: Single- and double-loop learning (Soeters, 2020, p. 66)



Organizational characteristics of military organizations make adaptation difficult. Highly bureaucratic and hierarchical characteristics of military organizations reduce their ability to adapt to changing circumstances (Barno & Bensahel, 2020). Militaries are hierarchically constructed which involves strict discipline to ensure the orderly conduct of troops in extreme circumstances. Therefore, obedience of subordinates is a crucial aspect of any military organization. Murray (2009) argues that this is antithetical to the process of adaptation which essentially requires a willingness to question their superiors.

The organizational theory views organizational behavior as a result of routines, such as standard operating procedures and structural systems that concentrate group action towards predetermined goals (Davidson, 2010, 11). Militaries rely on standard operating procedures and doctrines which increase individual soldiers' ability to function amid uncertainty. These routines create an organizational culture that reinforces organizational norms. As Barno & Bensahel (2020, 11) argue: "bureaucracies resist change because change increases the uncertainty that they are deliberately designed to avoid." Therefore, the organizational theory posits that military organizations' behavior could be characterized rather as an output of established routines than a deliberate choice.

Also, the operational environment of military organizations impedes adaptation. Especially two interrelated elements of war, change and friction, make wars “obedient to no law but their own'

(von Clausewitz, 1984). Chance is about elements in war, such as weather, that can not be controlled or predicted by military personnel. Military operations also encounter what Clausewitz called friction. Clausewitz (1984) explained the idea of friction as the following: "Everything in war is very simple, but the simplest thing is difficult. These difficulties accumulate and produce a friction which no man can imagine exactly who has not seen War." This means that even the most detailed plans can go wrong in an uncertain environment. Friction can be caused by various factors, such as imperfect information, fear, or the presence of danger (Barno & Bensahel, 2020). Together chance and friction create a 'fog of war' which means that actions and decisions in a conflict environment are always attributed with great uncertainty. Engagement in a conflict environment involves dynamic interactions between individuals within a military as well as with adversaries where small incidents on the ground tend to be amplified at macro-level consequences.

3.4 Causal Links Proposed by Complexity Sciences

In theory-testing process tracing, theorized causal forces must be reconceptualized into a set of parts which allows the detailed analysis of the hypothesized causal mechanism (Beach & Pedersen, 2013). Here the complexity theory is refined by addressing peace operation as a CAS. As such, it can not be isolated from the dynamics of the local security environment. This means that analysing the peace operation adaptation also involves the regional influences that shape the conflict. As summarized below in Figure 3.2, the hypothesized causal mechanism is distinguished into three parts: (1) emergent properties of the local level interactions; (2) institutional self-organizing process through organizational learning; and (3) operational-, and strategic-level adaptation of the peace operation. The non-linearity associated with complexity sciences makes the framework cyclical because the adaptation affects the local-level interactions, thus generating other emergent processes.

Figure 3.2 Theorized Causal Mechanism for Peace Operation Adaptation

Colchester (2016, 17- 44) defined emergence as "Lower-level interactions of system that affect on higher level structure." In a peace operation, emergence includes elements that arise from a non-linear operation environment through dynamic local-level interactions between the contingents of peace operation and other conflict actors. Clausewitz (1984) describes the emergent processes on the battlefield: "War is a true chameleon that exhibits a different nature in every concrete instance". Hence he views warfare as dynamic interaction where feedback loops produce emergent processes. Within the context of peace operations, such emergent properties are predicted including operational pressures and environmental change (Farrell, 2013, 8).

The environmental change includes, for example, technological developments which enable new capabilities and warfighting functions. Farrell (2013, 10) argues that new technologies may enhance or enable the operational capabilities of the organization which provide an opportunity for military adaptation. Hence, technological developments have the potential to change the character of war which precedes organizational adaptation. On the other hand, operational challenges may include intense combat activities, the adversary's new tactics, demanding physical environment or inefficient cooperation with other actors (Farrell, 2013, 8). Continuous failures to react to emergent issues might erode an organization's ability to reach its goals. Hence, failure to adapt can be a matter of organizational survival within a conflict environment.

Emergent processes hypothetically lead to institutional self-organizing within the peace operation which involves processes of organizational learning. Colcester (2016, 17-44) defined self-organization as "global coordination or order out of the local level interactions of initially independent components." In this thesis, self-organization is operationalized by analyzing single- and double-loop learning of the operation. It is assumed that proposals on new tactics, training, or equipment to counter emergent threats could be considered single-loop learning. On the other hand, double-loop learning could identify the need for strategic-level adaptation as well as operational-level doctrines.

The organization is expected to depict self-organizing behavior in response to the emergence of the operational environment. Clausewitz described self-organizing behavior in the context of warfare as the following: "If, in warfare, a certain means turns out to be highly effective, it will be used again; it will be copied by others and become fashionable; and so, backed by experience, it passes into general use and is included in theory." (von Clausewitz, 1984, 171). Thus, he noted the reciprocal nature of violence where the belligerents try to get an advantage over their opponent. By his notion of 'copying of means', Clausewitz indirectly describes organizational learning in action.

The last theorized phase of the process is adaptation which is the "capability through which systems can change in response to some event within their environment." (Colchester, 2016, p. 44) In this study, organizational adaptation is expected to involve taking action to support a particular organizational goal or matching the operational conduct to address the identified errors. Howard (2008) theorized that the UN missions adjust in two levels: the first level refers to change within the mission whereas the second level happens at the UN Headquarters. More conceptually, Farrell (2013, 8) distinguishes between strategic- and operational-level adaptation. The former includes strategy, force levels and resources whereas the latter involves adjustments in doctrine, training, plans and operations. If operational challenges were severe enough, the organization is expected to adapt on a strategic level. This entails adjusting force levels, resources, or campaign strategy. On the other hand, lower pressure might precipitate operational adaptation in combat doctrine, training, plans, or operational conduct (Farrell, 2013, 9).

3. Research Methodology

Since armed conflicts are scarcely researched from the perspective of CAS, this research design will be exploratory. The ultimate aim of this thesis is to describe the process of organizational adaptation in a complex operational environment. Hence, the methodological approach must be concerned with words, concepts, and shared understandings rather than numbers. Qualitative methodology is deemed appropriate for this investigation because it allows the production of detailed descriptions of the phenomenon (Bryman, 2016, 394). It pursues an understanding of the social world through the examination of the interpretations and focuses on words rather than quantification in the analysis of data (Bryman, 2016, 374-375). Although a qualitative approach is oftentimes used to form new theories, it can also be employed deductively to test existing theories.

First, I describe the chosen methodology and explain why the method of theory-testing process tracing is chosen to investigate the causal mechanisms of emergence and organizational learning behind the operational adaptation. Second, I discuss the data collection method of this study. The third section discusses why MINUSMA can be deemed a suitable case for the investigation of organizational adaptation. Thereafter, the third part of this chapter evaluates the observations before admitting to evidence. Finally, I address the limitations of this study.

3.1 Research Design

As this research focuses on a peace operation, a single case study analysis will be performed. This method allows the production of in-depth description of a social phenomenon (Yin, 2018). According to Yin (2018, p. 43), a case study can be justified if the case meets the following conditions: 1) research questions are 'how' or 'why' questions, 2) a researcher has no control over behavioural events, and 3) focus of the study is contemporary events. MINUSMA arguably meets all the aforementioned conditions: 1) the case is expected to reveal how the causal links proposed by complexity theory contribute to the adaptation of the peace operation, 2) the researcher has no control over the events in a civil conflict, and 3) the research subject is an ongoing peace operation.

To study the process of organizational adaptation, this research employs a method of *process tracing* which is "analysis of evidence on processes, sequences and conjunctures of events within a case for the purposes of eighter developing or testing hypotheses about causal mechanisms that might explain the case" (Bennett & Checkel, 2014, p. 7). The method aims to identify causal

mechanisms which are seen as ‘diagnostic' pieces within the case that contribute to supporting or refute alternative explanatory hypotheses (Brady & Collier, 2010, p. 180). Causal mechanism can be defined as a process that is capable of bringing change or preventing change in the system (Beach & Pedersen, 2013). Hence, the usage of the process tracing method can be deemed appropriate to study a case from the perspective of complexity sciences.

Employing process tracing in studies of civil wars can also be justified. By making within-case inferences, investigating causal mechanisms through process tracing allows a nuanced understanding of the underlying processes (Beach & Pedersen, 2013). As Lyell (2014, p. 186) claims, "process tracing is an invaluable tool in the civil war scholar’s toolkit. Or, rather, it should be, for it provides the ability to move beyond statistical association toward causal inference about why (and how) outcomes are produced in civil war settings."

In more specific terms, the used method is theory-testing process tracing, which deduces theory from the existing literature and tests whether the data can support the hypothesized causal mechanism within the given case (Beach & Pedersen, 2013). The purpose is to assess whether these sequential events of a case fit to hypothesis predicted by the theory or an alternative explanation (Brady & Collier, 2010). Beach and Pedersen (2013, p. 40-41) identify different analytical levels in process tracing. The causal mechanisms can be studied at macrolevel, microlevel as well as through micro-macro-, and macro-macro mechanisms. The choice of level depends on pragmatic considerations on which level the empirical manifestation is being best studied. In this thesis, the aim is to study the change of macrolevel structures in MINUSMA.

The process tracing method aims to identify a causal mechanism that may have influenced particular events or processes in MINUSMA. For a peace operation, it is estimated that the theorized causal mechanism responds to emerging challenges of the operational environment. The unit of analysis is organizational, focusing on the adaptation of the peace operation. This means that MINUSMA is approached as an organization that portrays behaviour of a CAS. The applied method of process tracing has previously been applied, for example, in studies of international organizations by Checkel (2014) and analysis of military adaptation by Serena (2010).

In theory-testing process-tracing, the evaluation of the empirical material involves a four-step process (Beach & Pedersen, 2013). The first phase includes a collection of empirical observations from the material. The collection of the data is not random but steered by the predictions of the theoretical framework. The second phase involves a critical evaluation of the observations from

the empirical material. A purpose of a document and the publisher's intentions should be noted in the evaluation. Third phase of process tracing assesses the accuracy of collected observations. Finally, the inferential weight of the evidence will be evaluated against the contextual understanding of the case. This should affirm a degree of confidence in the hypothesised causal mechanism.

Based on the theoretical framework, observations from the evaluated empirical material were coded into broad categories of emergence, self-organization, and adaptation as depicted below in Table 3.1. These coded observations ranged from single sentences to paragraphs. The observations were further arranged into thematic sub-categories that were derived from the theoretical framework. The sub-category of emergence includes environmental change and operational pressures. Self-organization entails categories of single-, and double-loop learning. Sub-categories of adaptation included strategic level change and operational level change. Strategic level change included observations that indicated a change in strategy, troop levels, or resources. On the other hand, operational-level change included observations that indicate a change in doctrines, operational conduct or training.

Table 3.1: Operationalization of the theorized causal mechanisms into predictions

Theorized mechanism	**Sub-categories**	**Predicted Evidence**	**Empirical Material Used to Measure the Predicted Evidence**
Emergence	Environmental change, operational pressures	Evidence on processes related to change of security environment or operational pressures that impose organizational challenges to MINUSMA operation.	Identifying reported challenges in SG quarterly reports, Uniformed Capability Requirement documents, MINUSMA Mission reviews, thematic reviews
Self-Organization	Single-loop learning, double-loop learning	Identification and framing of organizational issues; suggestions to improve the security and safety of peacekeepers	MINUSMA mission reviews and thematic reviews on UN peace operations
Organizational Adaptation	Strategic level change, operational level change	Operational changes in strategic and operational level	Measured by identifying the reported changes in SG quarterly reports, mission's plans and MINUSMA's budget

Each of the theorized part of emergent processes, self-organization and organizational adaptation should be operationalized into case-specific predictions about what type of evidence is expected to be found if the hypothesis is valid (Beach & Pedersen, 2013). In this thesis, each theorized part is operationalized above in Table 3.1. Predicted evidence on emergent processes includes different operational challenges related to the security and safety that MINUSMA contingents have encountered. This can be measured by searching reported challenges in SG quarterly reports and Uniformed Capability Requirement documents. For example, increased attacks towards peacekeepers could be an observation of emergence. Secondly, predicted evidence on self-organization includes identification and framing of different organizational issues as well as

suggestions for improvement of the security and safety of peacekeepers. This shall be present in MINUSMA mission reviews and different thematic reviews on the UN peace operations. Lastly, evidence on organizational adaptation is predicted to present organizational changes at strategic and operational levels. Organizational adaptation will be measured by identifying reported changes in Secretary General's quarterly reports and mission plans.

3.2 Case Selection

MINUSMA serves as an instrumental case which can reveal the adaptive characteristics of a peace operation in a conflict environment. Peace operations diverge from traditional military operations by limited operational mandate to use force and inclusion of various civilian components of crisis management in the mission. Through this research, I expect to find insights about organizational behavior which can apply to other multilateral peace operations. Describing the characteristics of organizational adaptation can also help to explain how similar organizations behave in a complex operational environment.

The research will focus exclusively on military aspects of the mission. Therefore, a civilian component of the mission, such as the conduct of police forces, peacebuilding, or political process, will be outside the scope of this research. The organizational literature on military adaptation has mostly revolved around the adaptation of Western militaries in the Iraq and Afghanistan wars. In these cases, the majority of research focuses on the performance of a single country's armed forces. However, an adaptation of multilateral peace operations has been less investigated from the organizational approach. This thesis chose MINUSMA as the case study because it has potential to reveal insights into the dynamics of a modern peace operation. Furthermore, the application of the complexity paradigm in the Sahel security environment can broaden the traditional approaches to security in the region. These aspects increase the academic and societal relevance of this study.

The case itself (MINUSMA) has a supporting role in facilitating our understanding of the adaptation of a peace operation in modern conflict. This research is supposed to elucidate the process adaptation where the variables are difficult to isolate from their environment and the data is collected through 'personal observation' of documents. Thus, the observations presented in this research are expected to test hypothesized causal mechanisms based on complexity sciences.

3.3 Data Collection

After formulating the theoretical framework of the study, the research can proceed to the data collection phase to provide a solid base of evidence for the presented findings. According to Beach and Pedersen (2013, p. 123) the data collection in process tracing must focus on strategically collecting empirical material that would enable to determine whether the theorized causal mechanism is present. In this study, the analysis will take place at the strategic and operational levels of MINUSMA which requires evaluation of both political and military documents. Thus, the empirical evidence for the analysis will be derived from the UN Secretary General's quarterly mission reports, the UN mission performance reviews, an action plan, and the UN Capability Requirement Documents. A complete list of used sources and their purpose will be presented below in Table 3.2.

Table 3.2. Summary of the evaluated UN documents

Document	**Focus**
Secretary General's Quarterly Reports (2017-2022)	Provide the Security Council updates on implementation of the MINUSMA's mandate
Uniformed Capability Requirement Documents (2017-2022)	Communicate capability requirements of the UN missions
Dos Santos Cruz Report (2017)	Improve safety and security of the UN personnel
Action Plan to Implement the Report on Improving Security of Peacekeepers (2018)	Implementation of Dos Santos Cruz Report
MINUSMA Independent Review (2018)	Mission-specific independent review
MINUSMA Force Adaptation Plan (2021)	Mission's adaptation to its extended tasks
van Roosen Report (2021)	Improve the protection against IED's

The Secretary-General provide quarterly reports about the implementation of the MINUSMA'S operational mandate. These quarterly reports describe security developments in Mali, priority political elements and topical information about the progress of the mission. The reports include a review of troop levels, force generation and development of the constitutional elements of MINUSMA. Hence, the quarterly reports describe major developments and challenges in the

operation. The analysed quarterly reports are released from January 2017 to October 2022, comprising altogether nineteen documents.

In addition to quarterly reports, the UN also conducted various reviews on peacekeeping that are utilized for this study. These operational reviews adopt a more technical approach to different challenges of the operation and their conclusions are mostly based on transparent methodologies (Forti, 2021). The evaluated documents include the 2018 MINISMA independent review led by Ms Løj and the Force Adaptation Plan of 2021. Furthermore, the UN conducted thematic reviews, such as the Dos Santos Cruz report in late 2017, which highlighted broad areas of improvement as well as issues and recommendations for all UN peace operations. The recommendations of the Cruz report were put into practice through the Action Plan to Implement the Report on Improving Security of Peacekeepers to all UN peace operations in April 2018 which was revised in 2019. The evaluated reviews also include threat-specific documents, such as The United Nations Response to Explosive Ordnance Threats by van Roosen in 2021.

Uniformed Capability Requirement documents portray an institutional understanding of the requirements of the UN peace operations and identify capability gaps in the mission. Published quarterly by the UN Department of Peace Operations, the Uniformed Capability Requirement documents describe the UN peace operations from a military perspective and provide strategic and operational overview of the missions. The documents also identify mission-specific capability requirements which could shed light on changing requirements of the missions and organizational learning.

3.4 Evaluation of Empirical Material

Before evaluating the empirical material, it is necessary to describe different types of evidence that are used to determine the occurrence of causal mechanisms. Punton & Welle (2015, p.5) distinguish between four types of empirical evidence: account evidence, trace evidence, sequence evidence or pattern evidence. Account evidence includes content of empirical material, such as observational evidence, meeting notes or interviews. Second, the existence of trace evidence can indicate an occurrence of a part of a hypothesised causal mechanism. For example, the existence of meeting notes supports the hypothesis that a certain meeting has taken place. Fourth, sequence evidence indicates the occurrence of particular events if hypothesised mechanism takes place. Lastly, pattern evidence provides insights of statistical patterns and probabilities.

The evaluated public UN documents are expected to provide account evidence on emergent challenges, self-organization and adaptation. Furthermore, they are likely to provide sequence evidence between 2017-2022. Furthermore, it is notable that merely the existence of MINUSMA Force Adaptation plan can be deemed as trace evidence that adaptation may have taken place. However, pattern evidence is not likely to occur because the public UN documents because they are less concerned with probabilities.

In order to analyse the inferential weight of the evidence, it is important to evaluate the documents against their situational context. To analyse the change in MINUSMA, this thesis evaluates the Secretary General's quarterly reports as well as insights of mission-specific independent review led by Ellen Løj in 2018, and MINUSMA Force Adaptation Plan of 2021. Furthermore, this thesis evaluates thematic reviews related to the security of peacekeeping (Dos Santos Cruz Report) and peacekeeping response to IEDs (van Roosen Report). The purpose of reviews is to create new ideas for UN discussions and make space for external findings and recommendations that do not conform to the prevailing interest of the UN headquarters (Forti, 2021). The reviews are conducted for varying objectives, such as for holistic evaluation of a mission or assessing the change in the security environment in relation to its strategies (Forti, 2021). Thus, the reviews have diverging political mandates, methodologies, outcomes, and themes.

While the evaluated empirical material provides insights of the institutional understanding of learning and adaptation, it must be noted that all reviews are highly political processes (Forti, 2021). Hence, the insights of reviews are often aligned with the institutional agenda. This may impose a potential systematic measurement error which could decrease the accuracy of observations. Although institutional context must be taken into account, I estimate that evaluating the identified issues and prioritized actions will convey institutional understandings with sufficient accuracy.

The self-organization of the MINUSMA can be measured through various interrelated mission reports and reviews. The Cruz Report (2017) highlighted broad areas of improvement as well as issues and recommendations for all UN peace operations. The Cruz report identified eighteen different organizational issues that affect the safety of peacekeepers in the UN peace operations, which are presented in Annex 1. The recommendations of the report were put into practice in all UN peace operations through an Action Plan to Implement the Report on Improving Security of Peacekeepers, published in April 2018 and revised in 2019. Furthermore, MINUSMA appointed

an independent review team led by Ms. Løj which identified organizational issues relating to the mission's activities Third UN initiative to adjust MINUSMA Force Adaptation Plan published in 2021. Third, threat-specific reviews were conducted, such as The United Nations Response to Explosive Ordnance Threats in 2021 (Annex 2). As a response to the increasingly complex threat environment and especially increased terrorist activity, MINUSMA assessed its configuration and developed an adaptation plan in December 2019 (United Nations, 2019d).

3.5 Limitations of the Study

The research design of this study imposes several limitations that must be considered. First, the external validity of results can be deemed low with the applied research method. Inherently associated with process tracing is a problem of equifinality which means that multiple pathways could lead to the same outcome. As Beach and Petersen (2013, p. 3) argue: "… no claims can be made, about whether the mechanism was only cause of the outcome". It is likely that self-organization will not act as the only causal mechanism behind organizational adaptation. Acknowledging these limitations, this thesis can only make a within-case inference about the causal mechanism that may have affected the adaptation of MINUSMA. However, Beach and Pedersen (2013, p. 153-156) remark that the results of theory-testing process tracing can be used for cross-case inferences if applied within a broader research design. This means that even though the results can not provide generalizations of peace operation adaptation, they could be used as part of a wider research project.

Second challenge of this research is data collection which can be deemed difficult in studies of conflict environments. For example, organizations and institutions tend to publish documents aligned with their agenda which can play a role in the evaluated documents. Interviewing footsoldiers and officers could provide further insights about the adaptation of operational conduct, training, doctrines and plans. To overcome this challenge, this study combined a spectrum of documents ranging from situation reports to internal reviews. This should increase the trustworthiness of the results. Further advantage of using documents is the stability of the data because the researcher's presence or research process itself does not affect the results in any way (Bowen, 2009, 31).

The last identified limitation relates to the internal validity of the study which might be affected by subjective biases of the researcher. This involves interpretation bias and confirmation bias in the evaluation of empirical material. A certain level of subjectivity is associated with qualitative methods but the aforementioned factors are apparent in process tracing in particular. Essentially, subjective biases may affect on evaluation of observations and the drawing of conclusions which may decrease the reliability of the results. To mitigate these concerns, the research process must be as rigorous and transparent as possible. This includes refraining from cherrypicking the observations, providing thick descriptions for the observations and including reflection on the causal weight of the empirical evidence.

Armed conflicts and adaptation of peace operations are scarcely researched phenomena which makes this research exploratory. The purpose of the study was to identify how the theorized mechanisms of emergence and self-organization could facilitate organizational adaptation in practice. However, this study is by no means a systematic review of the mission's performance nor intellectual exercise to reveal shortcomings of the operation. While this thesis investigates the adaptation of the MINUSMA operation, it does not provide a concrete assessment of the operation's successes or failures. Even though this research explores decisions and organizational learning, the research is not meant to produce a diagnosis of organizational performance.

4. The Case: MINUSMA

The purpose of this chapter is to introduce the background of the Malian civil conflict and the operational developments of MINUSMA between 2013-2017 prior to the inspection period. The aim is to describe Malian society at large, describe the main issues that have undermined peace as well as explore various complexities of the Malian security environment. This should draw a context for the analysis.

4.1. Background of the Conflict

To understand the context of the peace operation, we need to briefly address the Malian society at large. Mali is divided between historical and geographic fault lines into North and South which are divided by Sahelian Belt (Pezard & Shurkin, 2015; Charbonneau, 2017). Northern Mali can be described as desert while the south has a subtropical climate. The geographical division is linked to the demographic division of the country as well as their identities (Charbonneau, 2017). Most of the Malian population is concentrated in the South where the Bambara people constitute the largest ethnic group and they have dominated the Malian government and military for most of the past century (Pezard & Shurkin, 2015). Northern regions include Gao, Timbuktu, and Kidal whereas Central Mali includes the region of Mopti as depicted in Figure 4.1. Northern regions are sparsely populated and more ethnically diverse. Niger River Bend is resided by numerous semi-nomadic ethnic groups, such as Songhais and Peuls (Pezard & Shurkin, 2015). Furthermore, large populations of Tuarengs and Arabs reside across the central and northern parts of the country (Pezard & Shurkin, 2015).

The ethnic communities are often divided into confederations. For example, Tuarengs are divided into horizontal and vertical hierarchies by caste and clan. Each confederation is led by an *amenokal* and comprises clusters of clans that are associated with additional clusters of subordinate clans (Pezard & Shurkin, 2015). Also French colonial history plays a role in power consolidation between the numerous confederations (Pezard & Shurkin, 2015). According to Pezard and Shurking (2015), similar divisions occur in Arab communities, while Soghai communities have more horizontal organizations. This demonstrates the diverse political identities as well as various modes of governance across the communities in Mali.

Figure 4.1 Map of Mali (https://minusma.unmissions.org/sites/default/files/mali_map.pdf)

Mali underwent the fourth Tuareg rebellion in 2012 which involved an Islamist takeover in northern Mali and a military coup (Gauthier Vela, 2021). The outbreak of the conflict surprised many international observers, who had commended Mali for its tradition of secular democracy, and even regarded the country as 'the poster child for democracy' (Chauzal & van Damme, 2015). The 2012 crisis can be viewed as resulting from multiple interrelated crises which were further amplified by distrust between different communities.

Lotze (2015, 856) argues that the roots of the conflict stem from long-standing structural conditions, such as fragile social cohesion, severe inequality, ineffective governance, weak state institutions, climate change, environmental degradation, economic shocks, and resentment in the north of the country towards the south related to developmental and social neglect. Against this backdrop, the conflict involves the Government of Mali, as well as various armed non-state actors, such as Jihadist militias, pro-government groups, and Tuareg separatists. Politically, the armed groups are organized into two coalitions: the Coordination of Azawad Movements (CMA) which consist of insurgent groups, and the Platform primarily comprising pro-government armed groups (Gour, 2020).

4.2 Deployment of MINUSMA

In its resolution 100/2013, the UN Security Council established The United Nations Multidimensional Integrated Stabilization Mission in Mali (MINUSMA) with a mandate "to stabilise the key population centers, especially in the north of Mali and, in this context, to deter threats and take active steps to prevent the return of armed elements to those areas" (UN Security Council, 2013, p. 7). The mission was initially designed to re-hat the previous African-led International Support Mission to Mali (AFISMA) as UN forces (Kjeksrud & Vermeij, 2017). MINUSMA was authorized to conduct a broad range of security-related tasks, such as protection of civilians, supporting transitional authorities, monitoring human rights, restoring state authority, preparing national elections and implementing of Malian Transitional Map (Kjeksrud & Vermeij, 2017).

Nonetheless, the Security Council amended the mandate already in June 2014 to respond to the myriad challenges on the ground with emphasis *inter alia*, on security, stabilization, protection of civilians, human rights issues, the establishment of state authority, and national political dialogue and reconciliation (Kjeksrud & Vermeij, 2017). This broadened mandate also demanded expansion of the operational presence beyond key population centers and towards northern regions of Timbuktu and Gao, focusing on improved physical protection of civilians. Furthermore, one of the missions' key priorities remained to facilitate the political level negotiations.

In 2015, the government of Mali, CMA and the Platform coalition signed the Agreement for Peace and Reconciliation in Mali, hereafter referred to as the Agreement (Gour, 2020). The signatory parties committed to recognising Mali as a unified state, a decentralized decision-making system for the north, larger representation of the north in government, and reducing economic inequality between the north and south, as well as a reconciliation mechanism for the human rights abuses during the conflict (Gour, 2020). The Security Council listed MINUSMA's key priorities to support the ceasefire agreement between CMA, the Coalition and the government and implementation of the Agreement in June 2015.

Although the Agreement outlined the required changes, the parties were unable to reach a mutual understanding for terms of implementation. For example, it remained unclear how to disarm and reintegrate the former armed group members into envisioned mixed units of Malian security forces (Gour, 2020). Furthermore, the Agreement did not address the underlying drivers of the conflict.

Gour (2020, 134) argues that the Agreement failed to deal with political marginalization and lack of governance in central Mali, and disregarded issue of the organized crime in central Mali. The latter constituted a major motivator for armed groups which constituted a lion's share of their funding. Lastly, the Agreement does not address the widespread terrorism threat posed by extremist groups that were incompatible with the most basic terms of the Agreement, such as preserving a secular state (Gour, 2020). Hence, MINUSMA supports the political solution to address grievances of 'compliant armed groups' while other military actors engage in counter-terrorism operations against 'terrorist armed groups'. In practice, this distinction can be deemed superficial because the armed groups are fragmented and fluid in their allegiances and goals (Gour, 2020).

Today MINUSMA is one of the largest UN missions with over 15 000 uniformed personnel, consisting mostly of military personnel but also employing police forces and civilians (Gauthier Vela, 2021). The majority of the peacekeepers come from the Global South, with Chad, Bangladesh, Egypt, and Senegal being the largest troop contributors to the mission.[1]

MINUSMA was deployed in the context of challenging security environment characterized by transnational threats of jihadism and organized crime (Gauthier Vela, 2021). Since its inception, MINUSMA has faced severe challenges due to the volatile security environment and lack of political settlement (Kjeksrud & Vermeij, 2017). As a result, MINUSMA is among one of the deadliest UN peace operations with a total number of 281 peacekeeper fatalities by 2023.[2] Improvised explosive device (IED) attacks, rocket fire towards MINUSMA camps, landmine threats and suicide bombers pose a high threat against peacekeepers and the UN personnel (Kjeksrud & Vermeij, 2017). Insurgent groups are affiliated with the instigation of inter-communal violence, abductions, and human rights violations against civilians. Armed groups are oftentimes entangled with organized crime, such as illicit trafficking, to fund their activities.

MINUSMA is part of a wider security network of regional and global security organizations operating in Mali. The mission was deployed alongside counterterrorist operations of the Group of Five Sahel Joint Force, and the French-deployed Operation Sérval which later transitioned into Operation Barkhane (Karlsrud, 2015). What sets MINUSMA apart from previous peace operations is that the mission is also authorized to take direct role in stabilizing the country together with the

[1] United Nations (2023). MINUSMA Fact Sheet, retrieved from https://peacekeeping.un.org/en/mission/minusma
[2] *Ibid.*

Malian security forces (Karlsrud, 2019). In theory, the international military intervention was divided between the UN peacekeeping operation which engages with the legitimate political actors while French troops were supposed to deal with terrorist groups (Charbonneau, 2017). Charbonneau (2017) argues that such distinction was practically difficult in a volatile Malian security environment which made MINUSMA a *de facto* conflict party.

According to Kjeksrud and Vermeij (2017), this has alienated humanitarian actors from cooperating with MINUSMA because they are increasingly targeted by armed groups. The challenging security environment also brings forth diverging organizational goals. MINUSMA's robust mandate to use force has hampered cooperation efforts with different humanitarian actors which generally approve it as a last resort (Kjeksrud & Vermeij, 2017). Second, humanitarian actors avoid association with MINUSMA which is increasingly targeted by armed groups. Therefore, the operational environment combined with its stabilization mandate creates complex challenges for the operation.

5. Analysis

The following chapter describes the simultaneous nonlinear processes that took place in a complex security environment. Based on the theoretical framework, this chapter presents the observations that were classified into broad categories of emergence, self-organization, and adaptation as well as their sub-categories.

First, this chapter analyses the observed emergent issues that the UN documents describe arising from the complex operational environment. This includes observations on environmental change and operational pressures. Thereafter, the analysis will proceed to investigate to what extent the hypothesized causal mechanism of self-organization has taken place according to the evaluated UN documents. This section presents observations of single-loop learning and double-loop learning. Lastly, the observations of organizational adaptation at strategic and operational levels will be described. The adaptation involves observations of strategic level change and operational level change. The strategic level change included observations that indicated changes in strategy, troop levels, or resources. On the other hand, operational-level change included observations that indicate a change in doctrines, operational conduct, or training. The complete list of observations is presented in Annex 3. The evaluated empirical material is derived from various public UN documents from 2017 to 2022.

5.1 Emergence: Changing Security Environment and Operational Pressures

This part identifies emergent processes within the complex security environment. Colchester (2016, 17-44) defines the emergent processes as "Lower-level interactions of system that affect on higher level structure." The observations present emergent processes that changed the Malian security environment and imposed new threats for the peacekeepers as well as endogenous operational pressures that hampered the implementation of MINUSMA's mandate. The observations are summarized in Table 5.1.

Table 5.1: Observations of the emergent processes within MINUSMA between 2017-2022

Security Environment	Operational Pressures
Fragmentation of extremist groups	Inadequate conduct of peacekeepers
Asymmetric attacks increased	Capability gaps
Emergence of new technology	Insufficient equipment
Deterioration of security environment in Central Mali	Negative perception of the local population
Misinformation & disinformation	Covid-19 -pandemic

5.1.1 Change of Security Environment

Fragmentation of the security environment was an observable trend in the reports. New armed groups emerged in the security environment and continued to expand their operations throughout the inspection period. In 2019, Mouvement arabe de l'Azawad-Plateforme and the Groupe d'autodéfense des Touaregs Imghad et leurs alliés split into two factions (United Nations, 2019d). Furthermore, Katibat Macina, a part of Jama'a Nusrat ul-Islam wa al-Muslimi, split after expansion of the Islamic State in Greater Sahara in 2020 (United Nations, 2020a). The armed groups had diverging goals and ideologies. In 2018, reports mentioned particularly the Group for the Support of Islam and Muslims and Islamic State in the Greater Sahara as the most active jihadist groups in northern and central Mali (i.e. United Nations, 2018a; United Nations, 2018b). In 2019-2020, an extremist group affiliated with Jama'a Nusrat ul-Islam wa al-Muslimin (JNIM) (United Nations, 2020a). Coordination des mouvements de l'Azawad was reported as one of the most active separatist groups (United Nations, 2018a). Community self-defence groups, such as Dan Na Ambassagou and Dogon Ambassagou among the Dogon community, and Alliance pour le salut du Sahel for Fulani community also operated in the area (United Nations, 2018c).

The armed groups both clashed and cooperated with each other and threatened the local population by violence and carrying out abductions. This added another layer of complexity to the conflict. For example, members of the Dawsahak community, affiliated with the Mouvement pour le salut de l'Azawad, engaged into violent confrontations with de Coordination des Mouvements de

l'Azawad in 2019(United Nations, 2019c). During the same period, the Oulad Ich tribes and the Arab Tormouz engaged in violent clashes, with multiple casualties (United Nations, 2019c). Oulad Ich tribes were also affiliated with the Mouvement arabe de l'Azawad-Plateforme and the Mouvement arabe de l'Azawad-Coordination des mouvements de l'Azawad (United Nations, 2019c). The armed groups mostly operated in different territories, but the reports expressed their concern over alleged cooperation between themselves and together with international terrorist organizations. For example, Islamic State in the Greater Sahara threatened to cooperate with Al-Qaida to counter the deployment of the G-5 Sahel joint force (United Nations, 2018a). The reports also mentioned the increased social media presence of the terrorist groups.

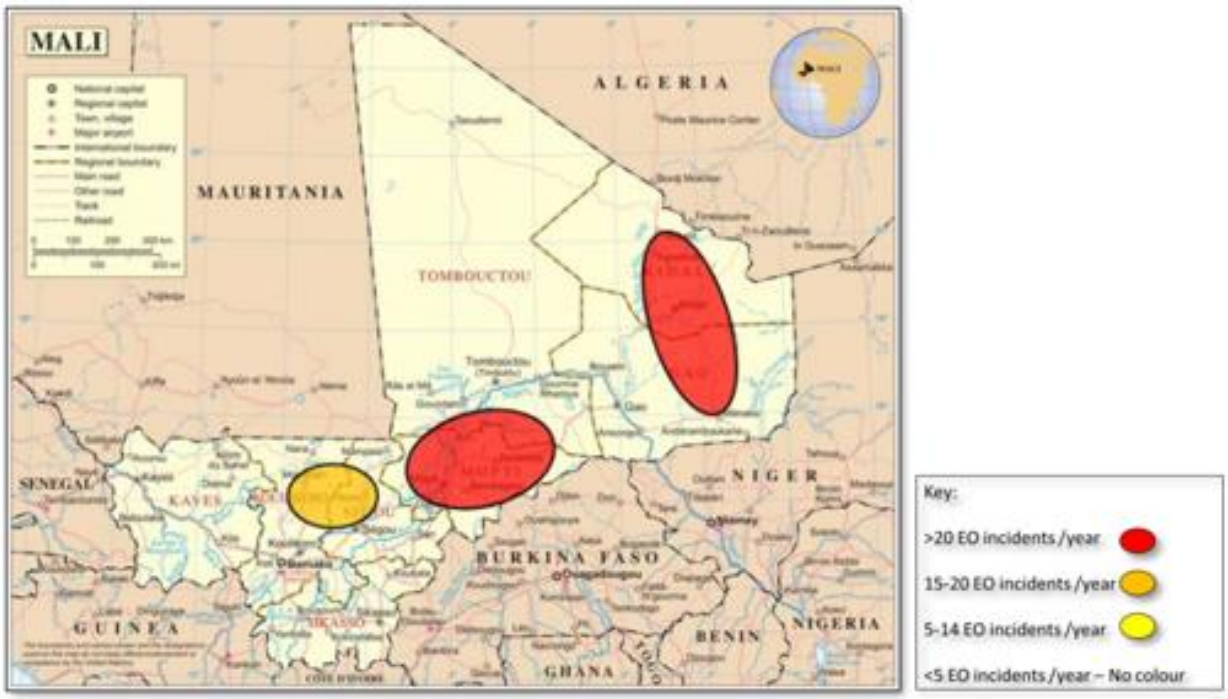
The security situation gradually deteriorated in central Mali throughout the investigated period. Increased terrorist activity occurred especially in Mopti and Ségou regions. In 2017, the Secretary General's reports indicate that more terrorist-related incidents occurred in Ségou and Mopti regions than in five other Malian regions combined (United Nations, 2017d). Targeted attacks against civilians became more frequent which led to displacing civilians. Extremist groups and self-defence militias further instigated violence across communities, especially in central Mali. This can be seen in clashes between Dogon and Fulani communities in 2018 and 2019, which were reported to be instigated by extremist groups (United Nations, 2018c).

Asymmetric attacks were regarded as the primary threat to the operational staff and civilians throughout the investigated period. Threats of the operational environment were described to become more transnational, infused with criminalized elements, which indicates the lines between different armed actors and types of violent actors blurred (UN DPKO, 2018a). Terrorist and extremist activity added created new types of threats to the peacekeeping environment which was seen as challenging the detection, warning, and reaction systems of the Mission (UN DPKO, 2018b). Throughout the investigation period, MINUSMA witnessed the attacks becoming more sophisticated, complex, and lethal against convoys and security posts (United Nations, 2017a). The armed groups employed new tactics, such as remote-controlled explosive devices and vehicle-borne improvised explosive devices (van Roosen, 2021). Furthermore, the armed groups combined the IED attacks with indirect fire against MINUSMA's camps (van Roosen, 2021).

In the evaluated documents, the improvised explosive devices (IEDs) imposed the most frequent source of damage for peacekeepers and civilians, especially across the main roads. Most of the incidents occurred in central and Northern Mali, as demonstrated in Figure 5.1. Although the

number of IED attacks remained relatively stable, their lethality increased substantially throughout the investigated period. The SC report mentions that the number of casualties doubled within a year between 2016 and 2017 (United Nations, 2017a). In 2018 IEDs caused the death of an unprecedented number of civilians (United Nations, 2018b). Also, the van Roosen report (2021, p. 25) found that the number of IED incidents has been steadily increasing from an average of 96 per year between 2013-2017 to 176 incidents per year between 2018-2021. Most of the IED attacks were single victim-operated devices that target convoys and vehicles (van Roosen, 2021). However, However, 7 of the 131 incidents in 2021 involved IED attacks coordinated with indirect fire, direct fire and new technology, such as UAVs and suicide vehicle-borne IEDs by hostile actors (Van Roosen, 2021). The combined usage of different capabilities was resulting in a higher number of casualties.

Figure 5.1: Heat Map of Occurred IED Incidents in Mali, 2021 (van Roosen, 2021, p. 17)



According to the van Roosen Report (2021), the IEDs were employed for various purposes. First, they were used by armed groups aimed to ascertain control over territory and prove their relevance to the local population. IEDs were also employed tactically to drive away foreign troops. Furthermore, IEDs were used for political purposes to force negotiations with the Government and

increase their relevance as a local stakeholder. Increased usage of IEDs led to increased civilian casualties, restricted access and damaged key infrastructure while also cutting off communities from humanitarian assistance, trading and limiting MINUSMA's, international troops and Malian security forces' presence.

The usage of weaponized technology characterized increasingly the Malian security environment. By 2022, the mission witnessed the threats of unmanned aerial systems (UAV) in the hands of non-state actors (United Nations, 2022a). The drones were used mainly for intelligence and reconnaissance against the peacekeepers but were expected to be further operationalized by the extremist troops. The reports highlighted three types of threats imposed by UAVs (UN DPKO, 2022a). First, they can be used directly against UN personnel, vehicles, or assets. Second, UAVs can cause indirect threat by carrying explosives. Third, drones can be used to coordinate an attack if used for intelligence, surveillance and reconnaissance. The reports also mentioned the threat of UAS swarms that can overwhelm the defence by the attacker.

Towards the end of inspected period, MINUSMA witnessed a surge of disinformation campaigns in 2022. Falsified or fabricated narratives were amplified through fake social media accounts (United Nations, 2022a). For example, an SC report in July 2022 described that the disinformation campaigns have become "systematic and orchestrated, and synchronized on an industrial scale to utilize local and pan -African networks as well as social media" (United Nations, 2022b, p.13). Also, Capability Requirement Documents in June 2022 noticed that the mission is increasingly targeted by misinformation, disinformation and hate speech (UN DPKO, 2022b). This was viewed as imposing another destabilizing factor on the security environment that affected the operation.

Malian political crises also changed the security environment. In 2021, the reduction in the presence of Operation Barkhane resulted in an unprecedented wave of attacks against the MINUSMA camp in Kidal Region (United Nations, 2021c). Security situation also worsened in central Mali where extremist groups sieged numerous villages (United Nations, 2021a). The complete withdrawal of international forces in the aftermath of the coups in 2020 and 2021 left a security gap which had direct and indirect implications for MINUSMA. The SC report mentioned that targeted attacks against civilians increased significantly in northern Mali immediately after the withdrawal of international troops (United Nations, 2022b). For example, the withdrawal of international forces diminished cross-border cooperation in the tri-border area, resulting in a high increase in civilian casualties (United Nations, 2022c). The first half of 2022 represented more

than 90% of the annual civilian casualties in 2021 (United Nations, 2022c). In addition, the SC report indicates that some available capabilities decreased, for example regarding shared camps and situational awareness (United Nations, 2022a).

5.1.2 Operational Challenges

The Secretary-General's reports indicate that MINUSMA has been facing capability gaps throughout its development which became increasingly apparent in 2018. The mission was lacking rapidly-deployable capabilities, especially helicopter medium-utility helicopters, that limited the missions' capacity to locate and disrupt terrorist groups (United Nations, 2018a). Furthermore, there was a shortfall of contingent-owned armoured personnel carriers which prevented the mission from patrolling and providing escort for the UN logistic convoys. Occasionally, operational challenges emerged also due to practical reasons, such as lack of fuel or challenges of the rainy season, which hindered operational ability to coordinate patrols in northern Mali. For example, the SC report in 2019 found that "a number of contingents continue to have significant ammunition shortfalls, which affect their capacity to conduct operations and participate in training." (United Nations, 2019c, p. 14). In 2022, the scope of the long-range and night patrols had to be reduced due to the threat of IEDs and the lack of mine-protected vehicles (United Nations, 2022b). These shortages of equipment and capability gaps were hampering the implementation of MINUSMA activities.

The Mission itself was criticized by the local population frequently throughout the inspection period. The 2018 independent review team found that the majority of human rights violations by governmental forces took place during counter-terrorism operations (United Nations, 2018b). The team pointed out that MINUSMA's had taken tasks in these operations by providing logistics and security-enabling for the non-UN security actors. They noted that MINUSMA's support and cooperation with security actors engaging in counter-terrorism operations had created a perception that the mission itself is involved in counterinsurgency operations (United Nations, 2018b). In 2019, demonstrations were held to support national armed forces while some protesters questioned the presence of the international forces in Mali (United Nations, 2019c). The situation further escalated in 2020 when MINUSMA patrols were blockaded by locals (United Nations, 2020a). The reports assumed that this was a result deteriorating security situation and mobilization of youths by radical elements and self-defence groups. After the 2021 wave of attacks against the

MINUSMA camp in Kidal region, protesters called for relocation of the MINUSMA camp (United Nations, 2021a). The demonstrators argued that the mission posed a security risk to the community.

In 2020, the COVID-19 pandemic-imposed limitations which further challenged the operational conduct. The pandemic was regarded as a serious point of concern for strategic and mission-specific force generation efforts (UN DPKO, 2020b). Although these challenges were regarded as hampering the functions of the mission, the overall impact can be deemed moderate. For example, the SC report concluded that the pandemic did not change the foundation of MINUSMA's response in Mali (United Nations, 2020b). The pandemic caused travel limitations for rotations and suspended temporarily all face-to-face training (United Nations, 2020c). Although the emergence of the pandemic was not regarded as the main security threat, the pandemic slowed down the implementation of the adaptation plan and delayed the infrastructure projects for camp extensions (United Nations, 2020c).

5.2 Causal mechanism: Self-Organization

The emergent threats of the security environment were continuously challenging the troops in operation. According to Colchester (2016, p. 17-44) self-organization is "global coordination or order out of the local level interactions of initially independent components". In the context of MINUSMA, global coordination can be seen in various UN initiatives to improve peace operations. The UN conducted various operational reviews and thematic which were often referred to in the quarterly reports.

Throughout the investigated period, self-organization can be investigated by identifying observations and suggestions of these reports and mission reviews. First, I will investigate the single-loop learning of the operational-level developments. Thereafter, the chapter will proceed to investigate double-loop learning in the mission which is about plans, strategies and initiatives to respond to the emergent threats. The observations of self-organization are summarized below in Table 5.2.

Table 5.2 Observations of Self-Organization

Self-Organization	
Double-loop learning	**Single-loop learning**
Changing mindsets	Re-tasking assets by transforming and relocating units
Proactive posture	Addressing equipment shortfalls
Enhancing accountability at all levels	Capability Generation
Heavy operational footprint	Improve training procedures
	Enhance force protection measures
	Lighter operational footprint
	Strengthen coordination and planning mechanisms

5.2.1 Single-loop Learning

Troops, Equipment, and Training

The Dos Santos Cruz Report (2017) concluded that unnecessary fatalities occur because the equipment of the troops is insufficient to deter and respond to attacks. The report outlined that the equipment is often ill-suited for the environment, it may be malfunctioning, or poorly maintained in the missions. Similarly van Roosen (2021) mentions that contingents arrive with differing equipment related to countering the threat of IEDs. The report noted that some troops were not able to conduct their tasks safely.

Dos Santos Cruz Report (2017) highlighted that many UN troops lack proper pre-deployment training to prepare them for the operational environment. The report remarked that some troops lacked even basic soldier skills, such as firing a weapon. Furthermore, the UN personnel was found failing to maintain their skills after deployment. Also, van Roosen (2021) found similar issues in contingents' competencies relating to mitigation of the IRD threats and suggested further pre-mission training in explosive hazard awareness.

The usage of existing capabilities was described as suboptimal in the examined reports. The Dos Santos Cruz Report (2017) noted that the best-quality troops were too often making an insignificant contribution to the operational effectiveness because there exists a disintegration between the different units. This affected information sharing that contributes to the security of all UN staff. Secondly, intelligence was reported to be overreliant on technology that was ill-suited to the requirement of the operational environment (Dos Santos Cruz, 2017). This affected on missions' ability to conduct operations and left them liable to surprise attacks.

The issue of suboptimal capability usage can be seen in the demands for re-configuration of troops. The Force Adaptation Plan called for increasingly dynamic troops to respond the rapidly evolving situations. The Force Adaptation Plan prioritized especially improving MINUSMA's operational mobility, agility, and flexibility (United Nations, 2019d). Similiar to previous mission reviews, Force Adaption Plan envisioned re-tasking assets by transforming and relocating units as well as generating new capabilities (United Nations, 2019d). The Force Adaptation Plan envisioned a Mobile Task Force which was composed of rapidly deployable units, helicopter units, and Intelligence, Surveillance and Recoinnance capabilities (United Nations, 2019d). This also involved the establishment of a new hospital in Mopti and acquiring land and infrastructure in Mopti, Gao, and Kidal regions. New capabilities were intended to improve operational capacity to rapidly respond to incidents across all the missions' sectors.

The Secretary General's quarterly reports prioritize capability generation measures in order to address existing capability gaps. This not only includes addressing operational caveats but also included enhancing the existing capabilities, such as improving logistics, interoperability, training, leadership, doctrine, training, and technology. Force Adaptation Plan (2021) calls especially for enabling capabilities, such as aviation and medical assets. These include, for example, unmanned aerial system capabilities, a quick reaction force company, military helicopter units, fixed-wing intelligence, surgical teams, and surveillance and reconnaissance capabilities (United Nations, 2021b).

Operational conduct

The Dos Santos Cruz Report described various deficiencies in force protection, such as the protection of camps and convoys. For example, physical structures, such as different sensors,

gates, and walls, were reported to be outdated or inadequate, non-operational, or even absent (Dos Santos Cruz, 2017). The report relates the insufficient camp protection with a lack for taking proactive posture for security. Concurring with the conclusions of the Dos Santos Cruz Report, the 2018 independent review team noted that around 70 % of the MINUSMA fatalities had been a result of incidents relating to force protection of camps or during convoys (United Nations, 2018b). The report found that most of the mission's resources were tasked to protect major population centers in the north, covering a radius of 5 to 20 kilometres (United Nations, 2018b). Aligning with the findings of the Dos Santos Cruz Report, the 2018 report also recommended consolidating the mission's camps. The issues with force protection were identified also in the Security General's quarterly reports which reported the fortication of 12 MINUSMA camps in 2018. For example, this included the installation of alert systems against indirect fire and sensors to improve security (United Nations, 2018b). The construction projects continued across the MISNUSMA camps throughout the inspection period.

Dos Santos Cruz Report (2017) indicated that long convoys travelling to remote locations are exposed to a heightened risk for attacks. Hence, most of the operational capacity is being spent on logistics and self-protection and this heavy footprint of operations reduces missions' capability to use assets on taking initiative and conduct operations to deter attacks. Although operational presence in remote areas was seen as an important strategic objective, the Dos Santos Cruz report noted that this could be achieved with fewer resources which were estimated to reduce the risks for the UN staff (Dos Santos Cruz, 2017). Hence, Dos Santos Cruz's report suggested increasing operational activities in high-risk locations while re-tasking excess assets from lower-risk locations. Similarly, the 2018 review calls for adjusting the mission's footprint in the north and allocating more resources to the direct implementation of Mission's priorities (United Nations, 2018b). Furthermore, van Roosen (2021) found that MINUSMA should reduce logistics supply demands for remote bases to counter IED- threats.

Concurring with the conclusions of Dos Santos Cruz Report, the 2018 independent review team noted that around 70 % of the MINUSMA fatalities had been a result of incidents relating to force protection of camps or during convoys (United Nations, 2018b). Especially chronic mobility shortfalls and a challenging security environment were estimated to hamper the operational activities. Similarly, the 2018 review calls for adjusting mission's footprint in the north and allocating more resources to the direct implementation of Mission priorities in the areas most

affected by the conflict (United Nations, 2018b). Thus, the reports called for the reprioritization of assets towards reinforcing its activities in central Mali.

Realigning the mission's troops created additional requirements for the troops and leadership. The operations were expected to be able to perform multiple, independent, and new tasks in challenging and remote locations (United DPKO, 2018b). The new requirements also included better mobility, secure supply chains, durable equipment and greater self-sustainability. These increasingly complex operations require strong communication among troops and civilians, situational awareness, improved interoperability and enhanced force protection. Nonetheless, the 2018 UN Capability Requirement documents identified a gap between expectations and delivery in this regard (i.e. UN DPKO, 2018b; UN DPKO, 2018c).

5.2.2 Double-Loop learning

According to Argyris and Schon (1978), double-loop learning affects to underlying organizational norms, assumptions or principles. Hence, this part identifies issues and recommendations that deal with underlying assumptions.

The Dos Santos Cruz Report (2017) outlined directly the following a broad issue of organizational adaptation in the UN peace operations:

> *"The United Nations has not fully adapted to modern hostile, operational environments and Security Council mandates. The United Nations lacks a conceptual approach as certain missions operate outside the governing principles of peacekeeping – consent, impartiality, and use of force. The United Nations also lacks required supporting skill sets, and resource processes and mindset for delivering peace operations in modern, complex conflict environments and forceful Security Council mandates."* (Dos Santos Cruz, 2017, p.18)

This indicates that the ability to adapt is identified by the UN. To address this issue, Dos Santos Cruz Report (2017) proposed that the leadership should take more initiative to change attitudes in the field, and adjust the operational footprint, concepts of operations, and revise mandated activities to be better suited for the threat environment (Dos Santos Cruz, 2017). Secondly, the report suggested adapting the training, composition of troops, equipment and mindsets according

to the requirements of the threat environment (Dos Santos Cruz, 2017). As a long-term recommendation, the Dos Santos Cruz Report mentioned that the Capstone Doctrine ought to be updated to reflect operational realities of the modern peace operations.

Dos Santos Cruz Report (2017) also argued that troop-contributing countries are often limited by a “Chapter VI Syndrome” which refers to a narrow interpretation of the principle for pacific settlement of disputes. He claims that this 'syndrome' leads to establishment peace operations without fully understanding the security risks of the local security environment. The Dos Santos Cruz report (2017) argues that contemporary peace operations still rely on the assumptions developed for “traditional” peacekeeping environments which were relatively safe for peacekeepers. Resulting from this 'syndrome', the peacekeepers tend to take a defensive posture, conceding ability to take initiative and striking first to the hostile actors (Dos Santos Cruz, 2017).

Dos Santos Cruz Report (2017) urged that a 'proactive posture' should be adopted to improve the safety and security of peacekeepers. For example, the report posits that surrounding operational camps with security zones, the UN camps could irradiate security to its proximity (Dos Santos Cruz, 2017). The report also noted that the fear of responding to Boards of Inquiry refrains troops from using force even when necessary. This was expected to lead to failure for using force for self-defence as well as deterrence against hostilities. However, Dos Santos Cruz Report (2017) also found that some personnel fail to take elementary precautions and implement standard operating procedures which expose troops for heightened risks.

Furthermore, Dos Santos Cruz Report (2017) calls for accountability at all levels of leadership to improve security measures. This can be viewed as promoting a security culture across the operations. The report found that limited interpretations of standard operating procedures, mandates and rules of engagement oftentimes lead to the leaders' inaction to take measures to improve security. For example, the logistics were seen oftentimes being defined by administrative thinking instead of operational which slows actions against hostile actors. Secondly, the Dos Santos Cruz Report (2017) outlines that the UN should hold itself and troop-contributing countries accountable for maintaining standards for sufficient personnel training and equipment. Failing to monitor the quality of the troops was noted as contributing to heightened risks for operations.

In order to increase accountability, the Action Plan proposed strengthening command and control arrangements at all levels, preventing attacks and ending impunity for crimes against peacekeepers (United Nations Peacekeeping, 2019e). The issue of accountability in MINUSMA was addressed

by strengthening its coordination and planning mechanisms within the mission and with the United Nations country team (United Nations, 2018c). Furthermore, MINUSMA reported having intensified its efforts to combat impunity for crimes that risk destabilizing the peace process in 2019 (United Nations, 2019b).

5.3 Outcome: Adaptation

Complexity theory posits that change occurs in a non-linear fashion. According to Colcester (2016, 17- 44), adaptation can be defined as the "Capability through which systems can change in response to some event within their environment". The operation's adaptation can be measured in operational-, and strategic-level change, as presented underneath in Table 5.3. Operational-level adaptation can be observed by examining changes in doctrines, operational conduct, and training of the troops. On the other hand, changes in troop levels, strategic initiatives, and resources indicated strategic-level adaptation.

Table 5.3 Observations of Organizational Adaptation

Adaptation	
Operational level change	**Strategic level change**
Increasingly 'robust', 'proactive', and 'dynamic' troops	Extending mandate to protect civilians in central Mali
Reconfiguration of troops by increasing mobility, flexibility, and situational awareness	Enhancing knowledge-based management through A4P and A4P+ initiatives
Generation of new capabilities (force protection and Mobile Task Force)	Increase in troop levels
Pre-deployment and in-mission training	Increase in operational resources
External communications	
Enhanced medical support	

5.3.1 Operational level change: Doctrines, Operational Conduct and Training

Doctrines

Towards the end of the investigated period, MINUSMA adopted a new posture of troops, which was described as increasingly 'robust', 'proactive', or 'dynamic'. This started on the highest level, as the UN Security Council requested the mission to 'carry out its mandate with a proactive, robust, flexible and agile posture' (UN DPKO, 2020a, p.1). While these descriptive characteristics can be hardly measured, this represents a doctrinal adaptation of the mission. Proactive posture of troops was described as an approach with a proactive stance to identify and address threats to both civilians and the UN personnel, rather than waiting for threats to materialize (i.e UN DPKO, 2020). Hence, it aims for an increased ability to take initiative against hostile actors. To support the doctrinal adaptation, MINUSMA reprioritized existing capabilities, while also generating new ones, which aimed for adaptation against emerging challenges posed by complex security environment (i.e. United Nations, 2021b). In practice, proactive posture involved increasing foot patrols and operational visibility in high-risk areas, engaging with local communities to understand and respond to their needs and having the ability to use force when necessary to protect civilians or deter hostile actors (i.e. United Nations, 2021b).

The proactive posture contributed to the mission's ability to adapt, thus becoming more resilient against new threats. For example, MINUSMA launched operations Operation Oryx I and Operation Oryx II in Central Mali in 2019 to cope with the volatile operational environment (United Nations, 2019c) Other examples are Operation Wyvern and Operation Wildebeest in 2021 which aimed for monitoring the local security situation to continuously refine and adapt to changing circumstances (United Nations, 2021c). Another evidence of this new approach was reported in January 2022, when intelligence identified an uptick in the movement of large extremist groups towards the town of Ansongo in Gao region while the area of Ouattagouna was believed to be used as an advantage point for armed groups (United Nations, 2022a; United Nations, 2022b). MINUSMA managed to respond to all early warning indications with the quick redeployment of its forces to indicate its presence around the town. Increased ability to continuously monitor security situations while maintaining the capability to respond and deter hostile actors can be seen as evidence of the new 'proactive posture'.

Operational Conduct

According to the extended mandate in June 2019, the mission realigned its units towards central Mali while maintaining an operational presence in the north (i.e. United Nations, 2019b; United Nations, 2019c). This indicates that the overall emphasis of the mission was shifted from the northern regions towards central Mali throughout the investigated period.

MINUSMA adapted to the heightened risks of the operational environment by reconfiguring its troops. By increasing the mobility, flexibility, and situational awareness of its troops, MINUSMA was better able to deploy contingents between sectors to respond to rapidly evolving situations. In practice, the adaptation can be seen through accelerated operational tempo with increased frequency, duration, and scale of operations (United Nations, 2019b). Furthermore, the troops were expected to conduct a broader spectrum of operations. Increased mobility and flexibility were achieved by training the personnel, addressing equipment shortfalls, and increasing the number of armoured carriers whilst reallocating more resources from force protection towards foot patrols both by day and by night (United Nations, 2019b). MINUSMA also strengthened its quick-reaction capability by combining realigned infantry units with enabling units and the simultaneous deployment of utility and attack helicopters (United Nations, 2021c). Helicopters were also increasingly employed for transportation of smaller units to more limited-scale operations. The quicker response time was supported by improved surveillance and intelligence capacity. The improved ability to quickly deploy and respond to emerging situations enhanced the MINUSMA's capabilities to operate in the asymmetric threat environment.

The mission also generated additional capabilities to establish the Mobile Task Force which was composed of rapidly deployable units, helicopter units and intelligence, surveillance and reconnaissance assets. Fully operational in 2021, the Mobile Task Force contributed considerably to MINUSMA's quick-reaction capabilities (United Nations, 2021c). In October 2021, The Mobile Task Force was reported to have improved the mission's presence across its operational areas (United Nations, 2021d). Because of its agility and flexibility to operate also in remote areas, the Mobile Task Force also contributed to reassuring the local population and deterring the armed groups. Thus, MINUSMA adapted its ability to respond quickly to evolving situations by generating new capabilities whilst reconfiguring its troops throughout the investigated period.

In March 2022, Secretary General reported that the operational ability to respond and adapt to asymmetric threat environment has become more resilient. For example, the number of IED

attacks increased significantly in July 2021 but MINUSMA mitigation measures managed to detect and clear forty-two per cent of the IEDs beforehand (United Nations 2021c). This improved peacekeepers' safety and allowed freedom of movement for the troops. MINUSMA addressed threats against convoys by integrating air support over identified hotspots and allocating additional forces to force protection of convoys.

Especially force protection capabilities were further developed in light of large-scale terrorist attacks, indirect fire, and the usage of UAVs. Installations of perimeter surveillance systems were completed in various camps, such as in Gao and Timbuktu in 2020 (United Nations, 2020c). For example, electronic surveillance systems were installed at Mopti and Kidal camps. Furthermore, the mission expanded internal communication systems in Tessalit, Goundam, Aguelhok, Ménaka, Ber, and Douentza camps (United Nations, 2019c). MINUSMA also started the planning phase of a new access control system on all premises. By 2022, MINUSMA reported having used 'agile base defence systems' by strengthening the force protection of the bunkers in Ansongo and Douentza, meanwhile installing overhead protection against indirect fire in Tessa, Ménaka, Kidal, Gao, and Timbuktu (United Nations, 2021b; United Nations, 2022a). To counter the threat of IEDs, MINUSMA received additional equipment. For example, troop-contributing countries provided additional armoured vehicle carriers to central and northern Mali in 2020 (United Nations, 2020a). Widespread efforts to improve force protection indicate the adaptation efforts of MINUSMA.

Mission addressed the disinformation campaigns by increasing its external communications with the local population. The steps included thematic press briefings on priority issues; interviews with senior MINUSMA officials broadcast on radio and through other media channels; started creating networks for information-sharing with local media; and increased cooperation with local journalists and media (United Nations, 2020c). The narrative included the Mission's tangible actions to protect civilians and its perceived achievements in political and military engagements. MINUSMA also increased its communication through social media and cooperated with local artists that were reported disseminating messages of reconciliation (United Nations, 2021c). The Secretary-General noted that the appreciation of the Mission differs considerably in areas where its activities have a visible impact. The renewed communication strategy also includes proxy communications, where beneficiaries of the Mission are sharing their experiences. Furthermore,

the mission was reported directly addressing the disinformation campaigns in the United Nations Radio Mikado FM's weekly programme "Le Vrai du Faux".

The emergence of the COVID-19 pandemic in early 2020 added additional safety issue to the mission. To maintain operational effectiveness, MINUSMA developed mitigation and contingency plans (United Nations, 2020a). Mitigation plans included pre-and post-deployment quarantines of the personnel to reduce the risk of spreading the virus. Contingency planning was not further addressed in the reports, only noting to ensure that the mission is "prepared should they face scenarios that would further impact their operations.". By 2020, MINUSMA installed thermal-detection cameras in Bamako, strengthened health and sanitation measures and updated medical infrastructure (United Nations, 2020a; United Nations, 2020b) Furthermore, medical support and medical-, and casualty evacuation procedures took steps to secure life- support supplies and antibody tests and ordered additional ventilators to the hospitals. The Department of Operational Support increased its quarantine, casualty, and evacuation capabilities.

Training

Improving the training of peacekeepers was included in the recommendations of the Cruz Report (2017) and subsequent Action Plan. For example, the mission conducted both pre-deployment and in-mission training sessions in post-blast investigations and explosive ordnance disposal (United Nations, 2019c). The mission undertook further efforts to increase hazardous explosive awareness training. In 2020, MINUSMA launched a new course on explosive threat mitigation for uniformed personnel which aimed at increasing their awareness of the threat and equipping them with the necessary skills to counter the threat (United Nations, 2020d). In 2021, two MINUSMA explosive ordnance disposal companies were delivered for explosive ordnance disposal and improvised explosive device disposal training to their personnel prior to deployment (United Nations, 2021c).

Throughout the investigated period, MINUSMA placed increased emphasis on training units to improve the skills of the uniformed personnel. For example, the mission deployed mobile training teams to improve the operational performance and security of the troops (United Nations, 2020a). In addition to IED threat mitigation, these teams were trained in first aid, casualty evacuation, and medical evacuation (United Nations, 2019b). Furthermore, MINUSMA also carried out regular in-mission courses to maintain the skills of the deployed uniformed personnel (United Nations,

2020d). MINUSMA also developed pre-deployment training on COVID-19 protocols (United Nations, 2020d).

5.3.2 Strategic level change: Strategy, Troop Levels and Resources

Strategy

The escalating security environment in central regions was reflected in Security Council's resolution 2408 in June 2019, which added a second strategic priority to MINUSMA's mandate: "to support to the restoration of State authority and protection of civilians in *central* Mali." In the same resolution, the Security Council stipulated the operational flexibility to deploy MINUSMA's troops between security sectors. The UN Security Council's decision to broaden the operational mandate can be seen as the result of strategic-level adaptation to the changing security environment.

Action of Peacekeeping (A4P) framework was launched in March 2018 to 'renew the commitments of member states towards the UN peace operations'. The A4P initiative issued a declaration of numerous political objectives, such as to improve the safety and security of the peacekeepers, strengthen the conduct of peacekeeping operations and its personnel and to support effective performance and accountability by all peacekeeping components (United Nations, 2018e). In MINUSMA, this led to numerous measures to improve training, such as the aforementioned training in explosive ordnance disposal operations and post-blast investigations (United Nations, 2019c). In 2021, the UN launched the Action for Peacekeeping Plus initiative (A4P+) which focused on clarifying the A4P priorities. This also seemed to the recommendations of Dos Santos Cruz report (2017) by prioritizing both operational and strategic integration, calling for further capabilities, changing mindsets and demanding accountability to and of peacekeepers. For example, the A4P+ implementation stressed adopting a lighter footprint model and operational agility, systematic assessment of operational effectiveness of the military component of the mission, promoting more robust patrolling, and more systematic investigation of performance failures.

As part of the A4P framework, MINUSMA also adopted new tools for leadership for knowledge-based management. The CPAS initiative is a mission-specific planning, monitoring and evaluation

system. In 2019, MINUSMA launched a comprehensive performance assessment system (CPAS) (United Nations, 2019c). In practice, it assists senior leadership to make decisions by indicating activities that have a meaningful impact while adapting or aborting those which are not. The second introduced leadership tool is a new geospatial data-driven tool that was brought to use in order to evaluate the impact of its protection of civilian efforts in 2020 (United Nations, 2020c). This enabled the mission to adapt its efforts more quickly, thus improving the effectiveness of operations.

Troop levels and Resources

The shifting emphasis towards central Mali was also seen in strategic initiatives MINUSMA. The force levels of MINUSMA remained relatively stable between 2017-2021. The authorized troop levels were 13,289, whereas deployed troops remained between 12 000 - 13 000 uniformed personnel until 2021. In 2021, authorized troop levels were increased by 1 730 additional military personnel to expand the operational presence aligning with an additional mandate (United Nations, 2021b). This indicates the mission's adaptation to new operational tasks.

Throughout the investigated period, MINUSMA suffered from chronic resource shortfalls and capability gaps. This was amplified when the mission adjusted to its second strategic mandate towards central Mali. As the Secretary-General concluded in 2021, MINUSMA's tasks were expanded without considering additional resources to the mission (United Nations, 2021b). The capability gaps included both manoeuvre capabilities as well as enabling troops, medical capabilities, and aviation assets. In addition to increased troop levels, shifting focus to central Mali also required additional information and technology equipment, infrastructure, air assets, vehicles and staffing (United Nations, 2021b).

Also the overall budget of the mission increased gradually. In 2017, the annual budget for the mission was $1,077.6 million (United Nations, 2017b). By 2021, MINUSMA's annual budget was increased to $1,183,384,700 million (United Nations, 2021e) Towards the end of the inspection period, the proposed budget for 2022 was $1,262,194,200 (United Nations, 2022e). Nonetheless, the funding was allocated through a number of budgetary frameworks across the various constituents of the multidimensional mission. Although an overall budgetary increase may indicate the allocation of additional resources to peacekeeping capabilities, the budget increase alone does

not necessarily correlate with addressing capability gaps of the MINUSMA's military component. For example, a large part of the operation's capabilities is dependent on contingent-owned equipment which is provided by the member states. With the added mandate to establish an operational presence in central Mali, the existing resources were also reprioritized. The resources were allocated increasingly towards infrastructure projects, vehicles, staffing, air assets and ICT equipment (United Nations, 2021b).

6. Discussion

After applying the theory-testing process-tracing method to investigate the adaptation of the MINUSMA operation, it is necessary to evaluate the inferential weight of the observations. The hypothesis predicted a three-part cyclical process of organizational adaptation: emergent processes, self-organization and adaptation within operational and strategic levels. This chapter aims to assess whether the theorized hypothesis can be deemed valid in light of the collected evidence. Alternative hypotheses will also be reflected, respectively.

At the outset of this chapter, it is important to remark that the research design of this study imposes several limitations. Especially present in this section is a potential interpretation bias and confirmation bias that may play a role in the following discussion. Furthermore, the scope of this study is limited to making inferences about whether the theorized causal mechanisms of emergence and self-organization were present within MINUSMA operational adaptation. Hence, no claims can be made on the generalizability of the findings. The extensive reflection on the limitations of this study is located earlier in the methodology section of this thesis.

6.1 Inferential Weight of the Evidence

The observations of this study suggest that changing security environment and operational challenges imposed emergent issues that affected to safety and security of the UN personnel. Observations of emergent issues in the security environment involved fragmentation of extremist groups, increased asymmetric attacks, the emergence of new technology and increased instability in Central Mali during the investigated period. Operational pressures involved inadequate conduct of contingents, persistent capability gaps, insufficient equipment, negative perception of MINUSMA among the local population and the Covid-19 pandemic. Identification of various emergent issues that facilitate organizational adaptation supports validity of the occurrence of this theorized mechanism within the case.

Self-organization was reconceptualized into theorized mechanisms of double-loop-, and single-loop learning. This study observed that independent reviews of the mission as well as thematic reviews identified areas of improvement and recommendations for enhancing the security and safety of the peacekeepers. Observations of double-loop learning include changing mindsets and

promoting a 'proactive posture' of contingents, calling for accountability at all levels of the organization, and identifying a heavy operational footprint of the mission. These observations support the hypothesized occurrence of double-loop learning. Secondly, the reviews provided numerous specific recommendations to improve the operational security and safety of the peacekeepers, such as improving training procedures, re-tasking assets, addressing equipment shortfalls, generation of new capabilities, strengthening coordination and planning mechanisms, or enhancing force protection measures. This indicates the occurrence of the theorized single-loop learning within the case.

The observations also support the occurrence of theorized adaptation at strategic and operational levels. At a strategic level, observations include extending operational mandate, enhancing knowledge-based management through A4P and A4P+ initiatives and increasing troop levels and resources. At the operational level, the mission adapted its training, operational conduct, capabilities, and doctrines to address different emergent pressures of the security environment. This includes promoting the 'proactive posture' of troops by increasing their mobility, flexibility, and situational awareness. Furthermore, the mission generated new capabilities, changed their training procedures, increased external communications, and increased medical support. These observations indicate that changes in both levels reflect the recommendations of internal reviews. Nonetheless, continuous capability gaps were not completely addressed. This can eighter indicate dysfunction between learning and adaptation or support the null hypothesis within the case. It is estimated that the former could be a more likely option in this case. Thus, theorized mechanism of adaptation can be deemed valid within the MINUSMA operation.

6.2 Alternative Explanations

Theory-testing process tracing method also demands the examination of alternative causal mechanisms for adaptation. As Bennet and Checkel (2014, 24) suggest, careful scrutiny of alternative explanations could decrease the confirmation bias that is inherently associated with the process tracing method. Secondly, the evaluation of alternative explanations can identify potential sources of equifinality alongside the theorized causal mechanism. These alternative explanations can be derived from theories of organizational adaptation.

Organizational theory proposes that causal mechanisms facilitating military adaptation are external pressures, the opportunity or need to grow (or survive) or failure in operation (Davidson, 2010). In the case of MINUSMA adaptation, this explanation can not be neglected. External pressures to change can be observed from the numerous independent reviews that identified severe issues in the conduct of all UN peace operations as well as MINUSMA's conduct. Secondly, the evaluated evidence also outlines MINUSMA's continuous efforts to grow in terms of requested capabilities and assets. Third, the evaluated evidence also indicated that MINUSMA failed to implement its mandate mainly resulting from chronic capability gaps and shortfalls in resources and assets. Thus, mechanisms suggested by organizational theory should be regarded as a source for equifinality.

Bureaucratic policy theory sees organizational adaptation as a result of myriad bargaining games between individuals at different levels. As a result of these bargaining games, an issue will be moved to an 'action channel' which raises it higher on the organizational agenda. For example, self-motivated bureaucratic actors could act on behalf of attracting more funding, resources, or assets into the operation. Within the context of MINUSMA, the self-interested bureaucratic actors could aim to boost their own organizational stature in the UN by bringing alarming security issues into these bargaining games at the international level.

This mechanism can be deemed unlikely in the light of evaluated evidence because various adaptations are based on numerous methodological reviews of operations that provide concrete recommendations to enhance operational efficiency. This is estimated to leave only little room for bargaining among decision-makers. However, the evidence is not conclusive in this regard. As Forti (2021) argues, the reviews are itself a result of political processes which are likely to entail their own political purpose. Further research is required to eighter overturn or confirm this alternative hypothesis.

7. Conclusion

"All intelligent thoughts have already been thought; what is necessary is only to try to think them again." (von Goethe, 1833)

This thesis investigated how the UN peace operation in Mali operated akin to the emergent challenges of the security environment and applied complexity theory to model the adaptation of a peace operation. The central research question asked how the MINUSMA operation has adapted on strategic and operational levels to increase the security and safety of its peacekeepers. First, this study explored how the UN documents describe the organizational adaptation of MINUSMA between 2017-2022. Second, this thesis sought to answer how can causal mechanisms of emergence and self-organization explain the organizational adaptation of MINUSMA.

By adopting the method of theory-testing process tracing, this study identied how the causal mechanisms proposed by complexity theory may have influenced the organizational adaptation of MINUSMA. Examined through the lenses of complexity sciences, the peace operation was approached as a CAS where emergence and self-organization through organizational learning were hypothesized causal mechanisms for organizational adaptation. The causal mechanisms were operationalized by distinguishing three parts of the cyclical adaptation process. First, emergent processes include pressures of the operational environment as well as indigenous operational pressures. Second, self-organization was observed by analysing single-, and double-loops of learning in operation. Lastly, the adaptation phase was measured by looking at strategic-, and operational-level change. The observations were collected by evaluating Secretary-General's Reports, Uniformed Capability Requirement Documents, and various mission-, and thematic reviews between 2017-2022.

The findings of this thesis confirm the hypothesized causal mechanism predicted by complexity theory. Emergent characteristics of the Malian security environment included fractionalization of the security environment, increased sophistication of IED attacks, usage of new technology, such as UAVs, and new means of communication. Furthermore, various operational challenges, such as lack of military capabilities, equipment and training, the COVID-19 pandemic, and problems with legitimacy among the local population created additional challenges that risked the security and safety of peacekeepers. The UN launched various initiatives to cope with the emergent challenges of the security environment. This includes various reviews of the operational conduct

as well as mission reviews which were expected to shed light on organizational learning. The findings illustrate that the reviews view the changing operational mindset as a prominent factor in decreasing fatalities in UN missions. Furthermore, various reviews recommended a more proactive posture of the troop configuration to improve operational performance and address equipment, training, and capability shortfalls.

Organizational adaptation was measured by analysing changes in the strategic and operational levels of MINUSMA. The strategic level change involved extending MINUSMA's mandate towards central Mali, enhancing knowledge-based management through A4P and A4P+ initiatives and increasing troop levels and resources. The operational level change included promoting a 'proactive posture' of troops, reconfiguration of troop structure, generation of new capabilities, adjusting training procedures, enhancing external communications, and adjusting medical support procedures. However, the mission reported continuous capability gaps and shortfalls in the resources which could indicate a discrepancy in adaptation efforts. According to complexity theory, change occurs in a non-linear fashion which could explain this discrepancy between learning and adaptation.

Inferential weight of observations was assessed by estimating the likelihood that the theory is supported by evidence. Occurrence of hypothesized mechanisms by complexity theory was deemed likely within the MINUSMA peace operation. Nonetheless, the scope of this study was limited to making inferences about whether the theorized causal mechanism of self-organization was present only within the MINUSMA operation. The observations of this study suggest that changing security environment and operational challenges imposed emergent issues that affected to safety and security of the UN personnel. This supports the validity of the observations.

This study identified a potential equifinality when the alternative hypotheses were examined. Organizational theory suggested external pressures, opportunity and failure in operation could act as potential causal mechanisms that affected organizational adaptation. It is nonetheless unclear how the organizational theory could model the process of adaptation. Hence, causal mechanisms suggested by organizational theory could be further researched. This study was also inconclusive regarding alternative causal mechanisms theorized by bureaucratic politics theory. Therefore, a potentially insightful future research approach would be evaluating how alternative causal mechanism of self-interested bureaucratic actors affect organizational adaptation in the context of

peace operations. Further evaluation of alternative hypotheses within a peace operation could also provide highly interesting insights.

This study has relied on public official documents published by the UN. However, theorized causal mechanism could be substantiated by interviewing senior officials and high-level decision-makers that have influenced organizational adaptation. This could mitigate the potential systematic measurement, confirmation bias and interpretation bias that could have affected this study. Another limitation of the single-case theory-testing process tracing method is that the causal mechanism can not be generalized to other contexts. However, the findings of this study could be used in broader research to make cross-case inferences. This suggests that the findings have the potential to become generalized if applied as part of a wider research project. Future research ought to focus on applying the theorized causal mechanism of self-organization to other UN peace operations. This could provide potentially fruitful insights into the peace operation adaptation in other settings.

This thesis illustrated that complexity theory can provide a useful conceptual tool to analyse peace operations. As Hunt (2020) concludes, it allows the analysis of interrelated factors to be incorporated into the holistic analysis. In a wider context, complexity theory has the potential to refine our understanding of why peacekeeping has taken place and answer why and how peacekeeping has evolved. The complexity approach also has the potential to augment our understanding of dynamic interactions that play a role in peacekeeping. Hence, it could provide insights how transformational change relate to the behaviour of diverging set of actors within the UN peacekeeping system.

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Annex 1

Summary of the recommendations of Dos Santos Cruz Report (2017, p. 9-19)

Changing Mindsets	**Improving Capacity**	**A Threat-Oriented Mission Footprint**	**Enhancing Accountability**
Update the principles of peacekeeping to reflect the operational realities	To ensure that pre-deployment training provides troops with the basic soldiering skills and environment-specific training	The UN operations should match their footprint at high-risk locations with the strategic objective of their presence there	Leadership at all levels should be held accountable for failures to adapt
Plan operations based on threat assessment of local security environment	Sufficient in-mission training to ensure soldiers maintain their skills and adapt to the threat environment	Concentrations of troops to solve security issues and repriorize resources towards this goal	The UN should be able to refuse deployment of unprepared personnel
Adopt 'proactive posture'	Contigents with high-quality technology, training and equipment should share information		
Senior leadership must ensure the compliance on basic precautions against threats	The United Nations should generate intelligence capabilities that are well-suited to the environment.		
Attraction of new troop contributing countries	Improve medical capabilities		
Invest in physical defence structures at camps	Invest in physical defence structures at camps		

Annex 2

Summary of recommendations of Van Roosen Report (2021, p. 52-58)

Overarching recommendations	Recommendations for MINUSMA
Establish a regional UN effort to address the drivers of instability leading to the use of IEDs	Establish a national/mission IED Working Group.
Expand, reinforce, and improve integrated UN IED planning and operations to include preemptive Peacekeeping-Intelligence and Intelligence, Surveillance, and Reconnaissance capability.	Encourage the Government of Mali to initiate dialogue with non-signatory armed groups (AG's) to address grievances and recognize motivations for using EO
Continue to engage politically to strengthen the national criminal justice system regarding IEDs	Enhance or create methods to communicate with the local population who are victims of the EO threat. Strengthen Community Liaison Assistants (CLA) and Protection of Civilians
Consider creating a regional UN forensics lab	Work with UN Headquarters to increase selected troops operational readiness
Review the United Nations Mine Action Service (UNMAS) role and resources with an emerging IED threat.	Use IED experts assigned to the Mission who can analyze trends to support Boards of Inquiry and consider its additional staffing
Continue to strengthen medical support to Missions to ensure the best-possible response to injuries	Continue to strengthen the Mission's IED forensics exploitation capacity
Include IED evaluation in a pre-deployment training of the uniformed personnel. Continue to review of the UN Manuals and training for changing IED tactics	Continue to reduce logistics supply demands for remote bases, including by identifying alternative logistics supply routes
	Further research why some military units suffer fewer IED casualties or incidents
	Monitor increased activity of Selected Bilateral Partners (SBP) for destabilizing actions.

Annex 3

Summary of the observations from the evaluated material

Emergence		Self-Organization		Adaptation	
Security environment	**Operational Pressures**	**Double-loop learning**	**Single-loop learning**	**Operational level**	**Strategic level**
Fragmentation of extremist groups	Inadequate conduct of peacekeepers	Changing mindsets	Re-tasking assets by transforming and relocating units	Increasingly 'robust', 'proactive', and 'dynamic' troops	Extending mandate to protect civilians in central Mali
Asymmetric attacks increased	Capability gaps	Proactive posture	Address equipment shortfalls	Reconfiguration of troops by increasing mobility, flexibility, and situational awareness	Enchancing knowledge-based management (A4P and A4P+ initiatives)
Emergence of new technology	Insufficient equipment	Enchancing accountability at all levels	Capability Generation	Generation of new capabilities (force protection and Mobile Task Force)	Increase in troop levels
Deterioration of security environment in Central Mali	Negative perception of local population	Heavy operational footprint	Improve training procedures	Pre-deployment and in-mission training	Increase in operational resources
	Covid-19 - pandemic		Enchance force protection measures	External communications	
			Lighter operational footprint	Enchanced medical support	
			Strenghten coordination and planning mechanisms		