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Sensemaking training in preparation for effective mission command in the African battlespace

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Abstract

The South African National Defence Force (SANDF), as a member state of the United Nations, the African Union and the Southern African Development Community, has certain continental and regional responsibilities. It is foreseen that the main areas of influence and operations of the SANDF will be situated in Africa and are referred to as the African battlespace, which holds challenges for deploying military commanders. We argue that the elevated levels of complexity and uncertainty in this context make mission command, as a command approach, especially relevant. The conceptual study on which this article is based, found that mission command is highly suitable to promote a command culture that is flexible yet robust, fosters unity of command at all levels, and simultaneously provides subordinate commanders with the freedom to act decisively when new opportunities are identified. For mission command to be applied in the African battlespace, sensemaking is an important cognitive skill that should form an integral part of the psychological preparation and training of commanders. Recommendations are made for sensemaking development in the current training of commanders in the SANDF.

Keywords: African battlespace, commanders, mission command, peacekeeping, sensemaking, military training

Introduction

In 1994, the South African National Defence Force (SANDF) was established as an amalgamation of statutory and non-statutory forces from the different stakeholders involved. In this process, statutory forces from the former South African Defence Force (SADF) were integrated with forces from the Transkei Defence Force, the Bophuthatswana Defence Force, the Venda Defence Force, the Ciskei Defence Force, Umkhonto we Sizwe and the Azanian People's Liberation Army (APLA) (Garcia, 2018). Each of these forces brought with it an approach to the concept of command that reflected its unique organisational and operational requirements. One of the challenges of the newly constructed SANDF was to incorporate their different command philosophies into one that suited the new organisation. The command philosophy that was formally adopted and authorised was mission command (Republic of South Africa [RSA], 2015; South

African Army, 2010). Mission command is designed to promote a flexible yet robust command system that fosters unity of command at all levels and yet provides subordinate commanders with the freedom to act decisively when new opportunities are identified (Garcia, 2018; Vogelaar & Kramer, 2004).

We embarked on this study to establish how military commanders in the SANDF can be equipped better for mission command, specifically with the addition of sensemaking training. This necessitated a conceptual analysis of mission command. The findings of the conceptual analysis are discussed in the results section of this article. Since the African battlespace (ABS) is expected to be the principal area of influence and operations of the SANDF (Bester & Du Plessis, 2014; Grundlingh, 2016; Heinecken, 2020; Neethling, 2011), an overview of the ABS is provided in the literature review section of this article.

The African battlespace

The ABS consists of a complex confluence of factors that affect the performance of soldiers and commanders during operations (Grundlingh, 2016). The factors that affect operations depend on the region in Africa (Garcia, 2018). Factors may include but are not limited to the physical terrain of the country, its socio-economic development, political instability, religious extremism, and extreme poverty. These factors create a context within which the SANDF must operate to achieve wide-ranging objectives (Cilliers, 2018).

The African continent is associated with conflict, which is becoming increasingly violent and prolonged (Musisi & Kinyanda, 2020). Following the global trends, Africa is also experiencing a higher likelihood of intra-state conflicts rather than inter-state conflicts, increases in the role of non-state actors (i.e. warlords, militia, rebels, mercenaries) in conflicts, and a rise in international terrorism (Cilliers, 2018). In addition, soldiers deployed in Africa are also confronted by other realities, such as extreme poverty (Schoch & Lakner, 2020; The World Bank, 2020), a proliferation of small arms, child soldiers, both inter- and intra-state conflict, an elevated risk of terrorism and foreign extremist movements, poor infrastructure, famine, poaching and malaria (Garcia, 2018).

The high levels of poverty and political instability render communities and societies vulnerable to political and social unrest, ethnic and religious extremism, acts of terror, the involvement of non-state actors in conflict, high levels of international crime and cyber threats (Ero, 2021). The socio-economic and political climate in a country has a direct influence on the military operations that take place in it and is one of the major reasons why peacekeeping operations in Africa have become "extremely difficult, complex, frustrating and dangerous" (Heinecken & Ferreira, 2012b, p. 50). Experience in peace operations in the Democratic Republic of the Congo (DRC) or Sudan shows that South African (SA) soldiers might face diverse rebel forces, mistrust between peacekeeping personnel and the host country, or even a hostile government.

Generally, African governments show an inability to control and govern their countries to ensure stability (Gettleman, 2010), which further contributes to an environment of conflict. Cilliers (2018) relates the twelvefold increase in violent and non-violent riots in Africa since 2001, as well as the increase in non-state conflict, directly to poor governance.

Economic exploitation by criminals and multinationals is also common in Africa, increasing conflict along cultural, tribal or religious fault lines. This is apparent in areas such as the DRC, the Central African Republic (CAR) and Nigeria, to name a few. The current conflict in the Cabo Delgado province of Mozambique is a good example of lingering resentments along cultural, tribal and religious divides that are aggravated through poor socio-economic development, economic exploitation and poor governance (Central Intelligence Agency [CIA], 2021; Cronje, 2021; Martin, 2021).

The ABS is also known for its social complexity. Bester and Du Plessis (2014) note that variable support for foreign military forces is an added dimension of complexity, as the society may include locals who are hostile, neutral or supportive. A good example of hostile locals can be found in the case of the Battle of Bangui in 2013, during which the SANDF contingent was attacked by a large rebel force assisted by some of the locals (Heitman, 2014). The complex interaction with local populations is further complicated by what Bester and Du Plessis (2014, p. 133) call "social complexity" and what Grundlingh (2016) refers to as the nonlinearity of wars on the African continent. Members of the SANDF often have to contend with combatants who are child soldiers or female, and who are often indistinguishable from non-combatants as they are either not wearing a uniform or are wearing a mixture of uniforms and civilian attire (Heinecken & Ferreira, 2012a; Martin, 2021).

The mandates governing soldiers may also not support their mission. Heinecken and Ferreira (2012a, p. 37) note that challenges in the host country escalate when soldiers at ground level are "restrained by weak, unrealistic and confusing mandates" (i.e. rules of engagement that do not protect them from the realities they face) and when they attempt to perform their duties with "insufficient economic and human resources" and equipment that is not suitable for the operation.

The realities of operations in Africa may change very quickly (Heinecken & Ferreira, 2012b). For example, peacekeeping missions can take place under Chapter VI of the United Nations Charter to resolve conflict through peaceful resolution via "negotiation, mediation, reconciliation, arbitration and peaceful settlement", but can also move to resolution under Chapter VII, where escalating disputes become too violent to resolve without force (Shinga, 2016, p. 261).

Geographically, challenging and varied physical environments are commonplace in Africa (Heinecken & Ferreira, 2012b). These place special demands on military commanders. Bester and Du Plessis (2014) note that the varying physical terrain can range from open deserts and savannah to dense jungles, with weather conditions that may range from extremely hot and dry to cold and extremely wet.

Besides the variation in the natural terrain, Africa is also rapidly urbanising. It is foreseen that by 2050, approximately 52% of the African population will be living in urban areas, bringing unique problems from developmental, socio-economic and disaster-risk perspectives (Adelekan et al., 2015; Fraser et al., 2017; Güneralp et al., 2017). For the military commander, this would mean that the focus of military operations would shift

from rural operations to operations in predominantly urban areas. Urban terrain brings about unique challenges to soldiers and commanders in terms of limitations on visibility, mobility and firepower (Medby & Glenn, 2002).

The ABS holds some challenges for deploying military commanders (Bester & Du Plessis, 2014; Grundlingh, 2016). Although these challenges may be replicated in other battlespaces, the ABS is specifically relevant to the current discussion since it is the primary space for operations for the SANDF.

Methodology

Conceptual studies use evidence from literature to build arguments that either synthesise theory, adapt theory or build typologies or models as these studies clarify concepts and determine their defining attributes (Walker & Avant, 2011). In this study, we set out to summarise and integrate what is already understood as 'mission command'. Although mission command is a familiar concept in militaries worldwide, such as in the United States, Great Britain, Israel and South Africa, it is frequently misunderstood (Shamir, 2011). A conceptual analysis of mission command allowed us to make recommendations for the force preparation of commanders.

Procedure

We followed the concept analysis approach by Rodgers (2000), comprising seven steps:

- identifying and naming the concept of interest;
- identifying surrogate terms (if any);
- selecting the data;
- identifying the attributes of the concept;
- where possible, identifying the antecedents and consequences;
- identifying related concepts; and
- generating a model case or exemplar of the concept (Foley & Davis, 2017; Tofthagen & Fagerstrøm, 2010).

As outcome of the conceptualisation, we aimed to show how mission command is a fitting philosophy in the ABS. Step 7 above is therefore not a traditional exemplar of the concept, but rather an attempt to link the previous discussion of the ABS to the results of the conceptual analysis. This is presented as part of the discussion of the results.

Although mission command has also been applied in other contexts (see Howieson, 2012; Moilanen, 2015), we searched for and selected literature related to the military context. The objective of the study was to define the attributes of the concept in this context and for the military commander specifically. The source of data used, was published articles and papers within the military field. The inclusion and exclusion criteria specified that all the documents had to be peer reviewed, published in English and published in the last 20 years (i.e. since 2002). Searches were conducted through Academic Search Complete

(ASC), EbscoHOST (including APAS, APA PsychInfo, Eric, Humanities, and Masterfile Premier) and ProQuest central. To ensure representation of documents related to the SANDF and the SA context, other sources were added manually after the search (see Figure 1). Table 1 shows the documents selected.

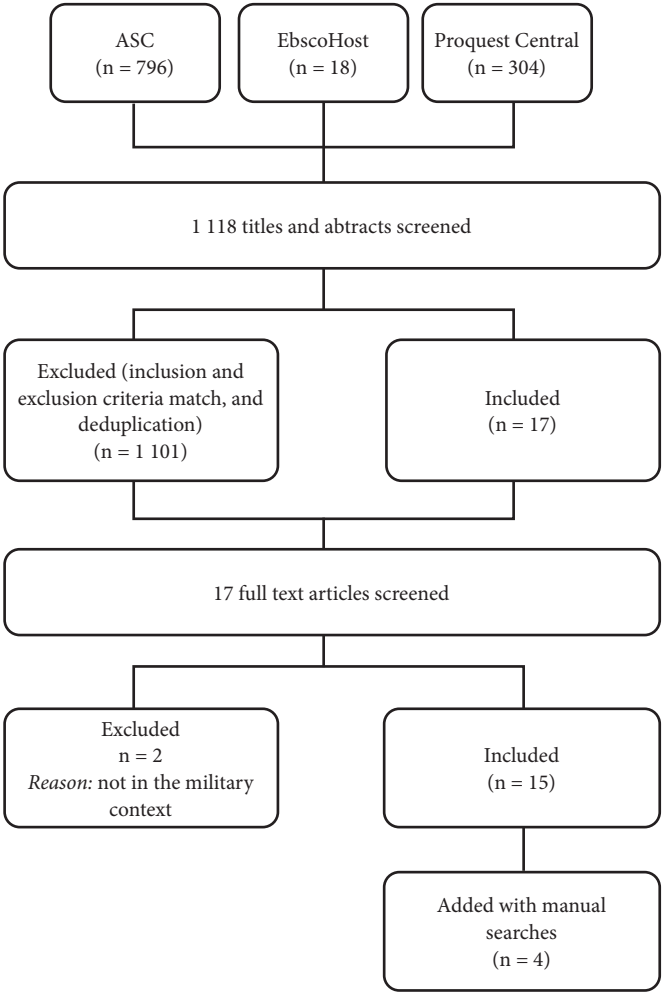

Figure 1: Overview of the process

Roger's (2000) evolutionary model of concept analysis focuses on an inductive approach to what is common. We employed a thematic analysis using ATLAS.ti 22 to identify the main attributes, antecedents and consequences of mission command.

Table 1: Included articles and documents

Author	Date	Journal	Country
Alibala	2019	*Journal of Defense Resources Management*	Non-specific
Ben-Shalom & Shamir	2011	*Defense & Security Analysis*	Israel
Carpenter	2016	*Air & Space Power Journal*	United States
De Vries	2013	Book	South Africa
De Vries et al.	2017	Book	South Africa
Glenn	2017	*Parameters*	Australia
Harvard	2013	*Air & Space Power Journal*	United States
Krabberød	2014	*Small Group Research*	Norway
Nilsson	2021	*Journal on Baltic Security*	Sweden
Ploumis	2020	*Comparative Strategy*	Greece
Ploumis & Pilalis	2018	*Defence Studies*	Non-specific
Rubel	2018	*Naval War College Review*	United States
Schoeman	2006	*Management Today*	South Africa
Scholtz	2012	*Scientia Militaria*	South Africa
Shamir	2010	*Journal of Strategic Studies*	Israel
Shamir	2017	*Israel Affairs*	Israel
Sjøvold & Nissestad	2020	*Team Performance Management*	Norway
Storr	2003	*Defence Studies*	Britain
Vogelaar & Kramer	2004	*Armed Forces & Society*	The Netherlands

Results

In this section, we describe mission command as understood from the analysis. The section focuses on the related concepts, the characteristic of mission command, antecedents and consequences, as derived from the literature.

Mission command: related concepts and attributes

Mission command is based on *Auftragstaktik* (see Alibala, 2019; Scholtz, 2012; Shamir, 2010) and is grounded in the assumption that people want to take responsibility for organisational goal achievement and, given certain criteria, enjoy their work and do it

willingly (SA Army, 2010). Mission command refers to "a command system in which responsibilities and authorities are delegated throughout the command line in order to stimulate initiative and leadership at all levels" (Vogelaar & Kramer, 2004, p. 410). It is therefore fundamentally a decentralised system of command (Shamir, 2017; Storr, 2003). The responsibilities and authority to make decisions are delegated throughout the command line (De Vries, 2013; Scholtz, 2012). The sub-commanders, who are involved in the operations in the field, make the decisions for actions based on their initiative and situational judgement, but within the boundaries of the superior commander's intent (Sjøvold & Nissestad, 2018).

Mission command can also be understood as the opposite of *Befehlstaktik,* which refers to an approach where the commander formulates plans and issues detailed instructions to his or her subordinates, expecting them to follow orders to the letter without any room for lower-level innovation or initiative (Ben-Shalom & Shamir, 2011)**.** In mission command, initiative at all levels of command is both encouraged and facilitated (Shamir, 2017). This assumes that the sub-commander involved in the operation is best informed and has to exploit the opportunities as they evolve on the battlefield (Vogelaar & Kramer, 2004).

Mission command is built on the realisation that "no plan survives the first contact with the enemy and therefore a good plan represents a central idea that allows maximum freedom to decide and act according to the emerging situation and changing circumstance" (Shamir, 2010, p. 646). As outcome, mission command facilitates a reduced need for communication within the hierarchy of command in the organisation (Krabberød, 2014).

Antecedents of mission command

For the successful implementation of mission command, several requirements need to be met. Firstly, there should be a clear understanding of the superior commander's intent (Carpenter, 2016; De Vries, 2013; De Vries et al., 2017; Harvard, 2013; Ploumis & Pilalis, 2018). The explanation should be clear and specific, focusing on the outcome (what) and its justification (why) (see Scholtz, 2012). Vogelaar and Kramer (2004, p. 412) note that the autonomous decision-making along the line of command –

> [Is] based on the assumption that subordinates understand their commander's view, their own mission, the objectives to be met and the reason why meeting them is necessary, and the broader context of that mission in the operation of the entire unit.

Storr (2003) adds that shared understanding of the overall intent is especially important in joint operations and when working with other nations, which is commonly the case in African peacekeeping operations (Garcia, 2018). All involved in the operation should have a shared understanding of the operational environment, solutions to tactical problems in the field, clarity of the mission, and the outcome of the operation (Ploumis, 2020; Shamir, 2017; Sjøvold & Nissestad, 2020).

Secondly, successful implementation of mission command is grounded in education. Knowledge should guide both the formation of the initial plans and the changes upon

implementation (or an inability thereof) (see Ben-Shalom & Shamir, 2011). Mission command requires unity of effort in common training and standardisation of drills and procedures. By standardising drills and procedures and conducting joint training exercises, leaders at all levels can execute their mission as they see fit without compromising the overall aim of the commander (De Vries, 2013; De Vries et al. 2017). Training and education ensure that commanders at all levels have the necessary skills and competence to make decisions independently (Nillson, 2021; Scholtz, 2012). Although practical operational experience is important, mission command requires a minimum standard of training in tactical skills (Storr, 2003), but also education to help them understand scenarios with which they are confronted, enable effective analysis of different possible scenarios, and develop plans for further action (Ploumis, 2020).

Thirdly, commanders at all levels should have an action-orientation and the willingness to create, identify and exploit situations and opportunities responsibly (Alibala, 2019; Storr, 2003). This implies that leaders should be risk-takers, but not be reckless (Carpenter, 2016; Ploumis & Pilalis, 2018). Commanders at all levels need to act using individual initiative without fearing the consequences of failure. This can only be achieved within an organisational culture where there is an emphasis on the implementation of an effective lesson learned system to see problems and develop more effective solutions (Nillson, 2021). Empowering autonomy requires some tolerance for well-intentioned mistakes (Shamir, 2017; Sjøvold & Nissestad, 2020).

Fourthly, commanders at all levels should display an ability to make autonomous decisions and a willingness to take responsibility for their decisions and actions (SA Army, 2010). In operations, it is often necessary for decisions to be made quickly to exploit new developments. There is therefore no time to refer up the chain of command. It is consequently vital that commanders at all levels are willing and able to make the necessary decisions promptly. It is also important to teach individual commanders to be willing and able to take responsibility for their decisions. This presumes, however, that the commanders have been allocated the means to fulfil their mission (Vogelaar & Kramer, 2004, p. 412).

Lastly, but most importantly, mutual trust is vital for mission command to succeed (Ben-Shalom & Shamir, 2011).

> Superiors are expected to trust their subordinates to devise solutions and accomplish objectives in line with the commander's intent, whereas subordinates are expected to trust their superior's judgement and ability to define an optimal and realistic purpose for their activities (Nillson, 2021, p. 8).

Commanders need to relinquish their need to control and should learn to trust their subordinates instead. Training and education provide commanders and their subordinates with a sense of each other's level of competence. Trust is based on ability and competence. Ability and competence, on the other hand, are based in education, thorough training as well as experience (Shamir, 2017; Storr, 2003).

Consequences of mission command

Mission command is especially relevant to address the challenges of a rapidly changing battlefield (Alibala, 2019), as it allows for on-scene decision-making during complex, rapidly unfolding scenarios characterised by high levels of uncertainty (Carpenter, 2016). It is considered vital when there is slow communication along the hierarchy of command in time-competitive environments (Rubel, 2018). Mission command reduces the need for communication in the organisational hierarchy (see Krabberød, 2014).

Shamir (2010) as well as Sjøvold and Nissestad (2020) indicate that mission command is the most fitting command philosophy in unconventional warfare and complex military operations where autonomy of action is needed to maintain the speed of the operation. Storr (2003, p. 125) uses the complexity theory to explain why this is the case, "Complexity theory suggests that the most effective way of managing highly interrelated and dynamic problems is by the decentralisation of decision- making and action to close to the source of the complexity." Alibala (2019) and Nillson (2021) argue for the application of mission command in the modern military environment where its relevance may be undervalued. Vogelaar et al. (2010) describe mission command as a command style that has proved to be the most appropriate to deal with the uncertainty, friction and ambiguity in military operations.

Discussion

This discussion links mission command and the ABS. Within the context of force preparation, it is important to consider how commanders should be prepared for mission command in the ABS. To serve this purpose, we extend our discussion of the results to the inclusion of an important cognitive ability we identified as crucial to the commander using mission command, namely sensemaking.

Mission command in the African battlespace

From the literature review, it was evident that the ABS resembles what Dixon et al. (2017) refer to as *in extremis* environments, where the SANDF soldier may be faced with "highly dynamic and unpredictable situations", expressed by the acronym VUCA (volatile, uncertain, complex and ambiguous), where the outcome of a commander's decisions "may result in severe physical and psychological injury (or death)" (p. 296). VUCA contexts are characterised by quick and chaotic changes and a lack of standard protocols (Nowacka & Rzemieniak, 2022). In the ABS, it is not only the multiplicity of roles and operations of the SANDF soldier that increases the complexity and challenges with which the commander is faced, but also the nature of the ABS where soldiers are deployed (Cilliers, 2018; Garcia, 2018). The current and future ABS will confront the commander with operations across the spectrum (Heinecken & Ferreira, 2012a), including a diversity of conflict situations from conflict management to negotiation, mediation, arbitration and general war (Bester & Du Plessis, 2014).

Operations will mostly be conducted jointly, requiring co-operation between all arms of service and divisions under one commander with the same end state in mind, and the

possible need to function as part of a multinational and interdepartmental group (De Vries, 2013; Grundlingh, 2016; RSA, 2015). The commander must be able to work jointly with different services and in collaboration with multinational military forces, governmental organisations, and international organisations as well as the civilian population. This requires flexibility and adaptability to foster effective working relations (Heinecken, 2020). The ABS is also characterised by simultaneous operations in more than one geographical location over an extended logistical line in areas with very little or poorly maintained infrastructure, which may hinder hierarchical communication (Grundlingh, 2016).

In contrast to conventional war, operations in the ABS, such as peacekeeping and counter insurgency, are "less controllable and predictable than conventional warfare environments" (Shinga, 2016, p. 262). The increasing asymmetrical and hybrid nature of operations in the ABS (see Murray & Mansoor, 2012) requires that commanders distribute their resources in terms of time and space to meet the operational objectives. As military operations become more dispersed in terms of space, time and purpose, there is a need for command and control at tactical and operational level to become more decentralised to provide commanders at lower levels with the authority and freedom to execute the tasks entrusted to them (Cilliers, 2007; Grundlingh, 2016; Liddy, 2012). On-scene commanders must be able to make decisions and to act proactively based on the situations they face (Heinecken & Ferreira, 2012a). This context requires that the SANDF will have to adopt and implement a command philosophy and practices that ensure resilience, decentralised decision-making, freedom of action, and the ability to use initiative to execute the intent of superior commanders (Garcia, 2018; Heinecken, 2020). This approach resembles mission command.

Sensemaking as requirement for effective mission command in the ABS

Effective decision-making and action are central at all levels of mission command. For effective decision-making, commanders should be able to assess their environment constantly, improvise, and use their initiative when opportunities are identified (Couch, 2007). They need to appreciate and understand the situation on the ground, formulate action plans, and communicate this awareness to their subordinates (and superiors) (Vogelaar et al., 2010). Characteristics that are important to realise this include delegation, communication, adaptability and problem solving (see Bester & Du Plessis, 2014 for examples of the characteristics of adaptable leaders). An important aspect that is often overlooked, however, is sensemaking.

Sensemaking informs decision-making by enabling the sense-maker to understand the connections, for example between people, places and events, to anticipate future events, and to act effectively (Klein et al., 2006a). It is an active and purpose-driven search for, and analysis of, information to understand a situation or event (Sushereba et al., 2021). Although sensemaking may be implicit and taken for granted, it is recognised as an important discrete function in military decision-making (Dixon et al., 2017) as it "allows people to deal with uncertainty or ambiguity by creating rational accounts of the world that enable action" (Maitlis & Christianson, 2014, p. 64). Sensemaking will therefore be

valuable for commanders employing mission command.

Although sensemaking can be approached from both a social constructivist (see Nicolson & Anderson, 2005) and a cognitive view (see Klein et al., 2006a, 2006b), we position it as a cognitive process for interpreting stimuli (also referred to as cues or information) and constructing frames (also referred to as frames of reference, mental models or cognitive schemata). Although we agree that sensemaking can take place at various organisational levels (see Kramer et al., 2010; Weick et al., 2005), and include both collective sensemaking (see Maitlis & Christianson, 2014) and individual sensemaking, the focus of this discussion is on individual commanders making sense of an unfamiliar event, situation, issue or anomaly in their routine work (see De Graaff et al., 2019; Sandberg & Tsoukas, 2020). Unfamiliarity necessitates the commander to notice and bracket situational information or cues that show a potential threat in the battlespace (Weick et al., 2005). Noticing and bracketing imply the interpretation of the event by means of frames that the commander has acquired over years of experience in work, life and training and which guide what is recognised and how it is interpreted. The meaning of the event is then categorised or labelled so that appropriate action can be taken.

Sensemaking comprises three phases: scanning, interpretation, and action (Busch et al., 2020). Scanning involves the identification and collection of information, which is then interpreted. Interpretation is based on comparing the new information to existing frames. The frame is the perspective, viewpoint or framework with which the commander will start to try to make sense of the situation (Billman et al., 2021). The frame is recalled through the process of perception, where cues (sensory or otherwise) help one to recall a memory. That memory is interpreted through the process of apperception based on knowledge of the situation (Klein et al., 2006b).

The frame will define what counts as important information (data) to consider in the situation or event as data are mapped to a frame (Sushereba et al., 2021). "What constitutes the 'raw data' in these frameworks is inexorably linked to the perceptions of the people involved in a particular situation" (Kramer et al., 2010, p. 127). The frame will, however, change as new information is gathered and there is a shift in understanding. Klein et al. (2006b) explain that the frame will be elaborated when new details are added. If the frame for the situation or event is questioned or even rejected, the commander will need to reframe the information or find another frame by comparing "alternative frames to determine which seems most accurate" (Klein et al., 2006b, p. 88).

For sensemaking, there should be deliberate scanning for information, which indicates that the situation does not fit the current frames of reference. It is important to understand that, in the complex and dynamic situations a commander will face in the ABS, there will never be complete certainty, only workable certainty (Kramer et al., 2010). There should therefore be a continuous and simultaneous process of sensemaking and sense-discrediting (Weick, 2010). Sense-discrediting implies an active and deliberate attempt to doubt existing understandings of the situation (De Waard et al., 2013). When there is a break away from existing sensemaking frames, sense-breaking occurs.

In mission command, sensemaking allows the commander to be aware of the situation, analyse the information and decipher what is happening in the environment so that action can be taken. Action, which Weick et al. (2005, p. 414) call "enactment", is an important aspect of sensemaking, which differentiates it from mere interpretation and understanding (Maitlis & Christianson, 2014). When action is taken, new information is fed back to create new meaning. As noted by Rudolph et al. (2009, p. 734), "the best information may emerge only after taking action", whereupon the purpose of interpretation is to guide one to more effective responses.

In complex, dynamic environments, such as the ABS, rational decision-making, which requires careful and comprehensive analysis of extensive information, is not possible (see Kramer et al., 2010). Sensemaking will therefore occur retrospectively with deliberate reflection on the outcomes of actions taken. Actions create cues for further interpretation and understanding of the situation. Sensemaking is therefore a continuous process of reflecting on and evaluating the success of one's actions. This enactment fits well with mission command, which requires decisions to be made quickly to exploit new developments. Action is also taken immediately during the sensemaking process because it allows further interpretation of the situation (Weick et al., 2005). The actions taken are based on a hypothesis that is tested by the outcome (Weick, 2020). The outcome is fed back to the frame of understanding, which leads to a more comprehensive pool of information on which to draw and on which to base future understandings.

Sensemaking is important during the chaos, ambiguity and complexity of full-spectrum military operations and even more so during the asymmetrical and hybrid operations that are evident in the ABS (see Ntuen, 2008). In complex operational environments, such as the ABS, sensemaking implies the "ability to construct a coherent and shared explanation for events and circumstances", which enables operational functioning (Bartlett et al., 2013, p. 3), turning the "circumstances into a situation that is comprehended explicitly in words and that serves as a springboard into action" (Weick et al., 2005, p. 409). In conventional war, commanders can rely on their routine training. Although this still serves a purpose in the ABS, the volatility and nature of the operations often require additional skills (Heineken, 2020). In situations that cannot be dealt with based solely on routine training, sensemaking is especially important. In these situations, the commander is required to act and diagnose iteratively in an unfolding situation (see Rudolph et al., 2009). Sensemaking will therefore be relevant for mission command in the ABS where operational situations often differ from what was expected and trained for (De Graaff et al., 2019).

The meaning that commanders attribute to the current situation and the predictions they base on this, as well as the actions that they believe should be taken, must be communicated to their subordinates because a collective understanding will ensure survival and operational success. This is in accordance with mission command, which specifies that commanders need to explain the situation and their intent in such a manner that their subordinates understand the situation with clarity and know the expected outcome and the reasons for the outcome (Carpenter, 2016). In terms of the sensemaking process, commanders will not only share meaning but they will intentionally influence the sensemaking of their subordinates (Maitlis & Christianson, 2014). This involves sense-

giving in which commanders strategically influence how their subordinates understand the situation, context or event (Rom & Eyal, 2019). In life-threatening situations, which may be encountered in the ABS, sensemaking and sense-giving will take place simultaneously and faster than in other environments (Dixon et al., 2017).

Current training of commanders

The need to develop military leaders to function effectively in the chaos of operations and to make quick, adaptive decisions is globally recognised and integrated into their training (Blacker et al., 2019). In the SANDF, leadership training, especially officer training, focuses on training the officer to conduct an appreciation of the situation and to make decisions based on problem-solving models. This training starts during basic military training with the introduction of appreciation models, such as GROUND.

GROUND is an acronym used at tactical level to conduct a quick appreciation of the situation. At foundational level (officer formative) and sub-unit commander level, the problem-solving model (PS model) is introduced. Students are expected to know the theoretical principles and ways to apply them practically. From a sensemaking perspective, theoretical training is important as it allows some frame for the correct principles and procedures in different situations as well as the frame to which data will be fitted during operations (Sushereba et al., 2021). At unit commander level, the same model is used to introduce students to the brigade planning appreciation and planning cycle while the same is done at senior command and staff level, where students are expected to use the appreciation and planning process for campaign planning. The methodology ranges from presentations to case studies, sand models and group discussions, with some practical work during the practical stages of these courses. The focus is on the application of the principles of war in conventional operations.

Given the size of the course groups – they range from 80 (Senior Command and Staff Course) to 320+ students on SA Army Junior Command and Staff Course – and the number of instructors on the courses, the focus is on knowledge transfer and teaching students to find solutions to well-defined problems, such as those found in conventional operations (see Blacker et al., 2019; Dörner & Funke, 2017). Well-defined problems relate to situations in which the problem, the outcome and the context remain relatively stable, predictable and controllable. A logical-sequential reasoning process, such as the PS model, should be sufficient to solve these problems effectively (Danielsson, 2020; Klein, 2015; Liddy, 2012). However, the ABS is constantly changing. The decision-making process is therefore characterised by uncertainty and complexity, and even the process of defining the problem and the required outcome is not a certainty. Training in sensemaking would therefore be invaluable since a rational decision-making process is ineffective (Kramer et al., 2010).

Military training is also heavily reliant on skills training and drills, which are imperative and can never be replaced. The standardisation of training and drills forms the basis of mission command and ensures that commanders at all levels can execute their mission based on their specific requirements without compromising the overall aim of the commander. In terms of sensemaking, Dixon et al. (2017) note that, although

sensemaking goes beyond military drill training, instinctive reaction training may accelerate sensemaking because it allows respondents to free up cognitive space to attend to other cognitive activities required during the sensemaking process. However, Kramer et al. (2010) explain that, although drills and skills training are important for sensemaking, it could lead to an oversimplified version of reality and overconfidence in one's own capabilities, which may lead to poor sense-discrediting (Maitlis & Christianson, 2014). It is therefore important to train commanders specifically in effective sensemaking within the specific context they will encounter in the ABS. In the ABS, mistakes based on a failure to notice important cues of information may be fatal, making sensemaking specific training vitally important (Billman et al., 2021).

Recommendations for incorporating sensemaking training for commander force preparation

Sensemaking is a cognitive skill (see Ntuen & Leedom, 2007). *Cognitive* implies processes that involve "making decisions, making sense of situations, detecting and diagnosing problems, prioritising and trading goals, managing attention, anticipating future states and performing workarounds" (Klein et al. 2018, p. 682) whereas *skills* imply training to enable a higher level of expertise. Sensemaking, like other cognitive skills, can be developed through experience over time in real life and in deliberate practice. Experience over time may be problematic, and therefore other training events that can replicate experience, such as scenario-based training, are valuable in cognitive skills development. Scenario-based training allows the students to link real-life information as it unfolds realistically to their theoretical frame (Sushereba et al., 2021).

Mason (2020) proposes sensemaking training that uses deliberate practice, which involves training exercises that:

- are overseen by expert commanders who have had experience in operations in the ABS;
- require the students to engage in abilities that are advanced (one step ahead of their ability levels but not too advanced);
- are repeated so that the skills can be practised;
- have specific goals;
- are a series of short events rather than one long event;
- are always accompanied by feedback from the instructors; and
- where feedback is followed by immediate action.

Klein et al. (2018) used a combination of scenario-based training and deliberate practice for development of cognitive skills, where a scenario of unfolding events, specific decision points and expert feedback is used to develop cognitive skills. As explained in the previous section, scenario-based and case study training are already employed in the current commander training in the SANDF. Training is not currently focused on sensemaking per se, however. These training exercises may be tailored to focus on sensemaking so that it resembles the deliberate practice principles.

For sensemaking specifically, training can be targeted to develop key trainable elements in the sensemaking process, namely perceptual skills, situational awareness and assessment, mental modelling (or framing) and the generation and evaluation of hypotheses (see Dixon et al., 2017; Sushereba et al., 2021). Perceptual skills are related to the identification and collection of important data from the environment. Such data can be in the form of explicit or tacit cues (Bartlett et al., 2013; Ntuen, 2008). In scenario-based training, these cues should deliberately unfold at certain times to resemble the reality of the ABS. During training, the commander is taught how to look for possible cues in the specific context and how to differentiate between them.

Situational awareness has been recognised as an important aspect of command in VUCA contexts (see Nowacka & Rzemieniak, 2022). It is integral to sensemaking (Dixon et al., 2017) as it refers to "what is happening (inside and outside an organization) that could have an impact on operations, including threats, opportunities and the socio-economic and cultural context" (Krawchuk, 2018, p. 123). Situational assessment is part of the process by which situational awareness (a knowledge state) is arrived at (see Klein et al., 2006a), and involves diagnosing the situation based on the information attained and interpreting the environment (e.g. by identifying which cues in the specific context may indicate friendly, neutral or hostile situations) (McAnnaly et al., 2018). Situational assessment relies heavily on the theoretical knowledge of the commanders and their ability to match real-life cues to the theoretical conditions and the expectations of the different situations (i.e. friendly, neutral and hostile).

Development of situational awareness can only be attained if the student spends time in situations that closely resemble the VUCA environment (Krawchuk, 2018). Training time will always be limited. Given the density of the syllabus, one should train as intensively as possible within the time one has. Some training will be more beneficial than no training at all. In shorter time frames, brief targeted training may, for instance, be beneficial in developing situational awareness. Saus et al. (2006) show the benefits of brief targeted simulation exercises using shoot–don't shoot scenarios when training situational awareness in police officers. Simulation training offers the opportunity to recognise and analyse cues and patterns to make sense of a specific environment, situation or culture (Bartlett et al., 2013). Some scholars from other fields have recommended methods such as game-based training (i.e. using video games) that may also be considered (see Graafland et al., 2015)

A mental model from the sensemaking process is the frame for describing and explaining the current situation or event and predicting its future states. Effective frames help commanders to assess the situation quickly and to plan interventions effectively. Frames are based on experience, and therefore training should focus on providing probable scenarios that the commander may encounter in the ABS. Sushereba et al. (2021) note that it is important to present the cues and clusters of cues for the different situations as well as how they relate to each other in the development of frames during training. Mason (2020) refers to the development of an extensive case bank to develop expert performance. In training, students should be confronted with realistic simulations and case studies to build frames. Mason further notes that students should be exposed to many diverse

situations that will lay the foundation for recognising patterns through which frames of understanding the ABS can be developed. Flandin et al. (2018) highlight the importance of adding possible events in the training scenarios that may even be disturbing or stressful to the commanders. This will allow them to build confidence in their own abilities to function under stressful conditions.

From a cognitive perspective, hypothesis generation and evaluation of the outcomes of actions are key aspects in the process (Klein et al., 2006b). During training, students should be given the opportunity to generate hypotheses about the possible outcomes of combat interventions with a focus on cause and effect (see Sushereba et al., 2021). Training in hypothesis generation involves the recognition of 'what is going on now?' as well as operationalising the hypothesis by articulating the criteria and expectations of different possible scenarios (i.e. 'if this is going on, that will be the outcome'). This is done by linking specific cues and clusters of cues to specific possible outcomes, searching for confirming or disconfirming cues and generating alternative hypothesis that fit the data better. Similarly, Mason (2020) refers to the incorporation of deliberate practice on three levels to answer the questions:

- What do you see or hear?
- What does this mean for the mission?
- What does this mean in terms of what will happen next?

Feedback during training is imperative to indicate to students how well their frames, interpretations or hypotheses will fit the situation (Mason, 2020). Less experienced students should be able to compare their understandings with those of experienced commanders (Sushereba et al., 2021). This can be achieved through discussion between students and commanders with different levels of experience. If the students involved have different levels of experience in the field, this may be realised through the formation of groups during case-based and scenario training. This could also be supported by narratives from experienced commanders who are not directly part of the training but who might be visiting trainers or guest speakers. Feedback is further an essential element in targeted deliberate practice, where the students repeatedly engage with others who are more skilled than themselves in tasks that are one step beyond their current capabilities.

Simulation and training activities should be presented either directly after theoretical training or, in the absence of theoretical training, via different case-based scenarios presented in order of complexity to allow for scaffolding (Sushereba et al., 2021). Cognitive skills development can never be only theoretical, however. Practical training provides the student with the opportunity to apply theoretical principles, to make mistakes and, if feedback is given effectively, to develop the reflective cognitive skills that enable effective sensemaking.

It is important that all the training activities should resemble the reality in the ABS context as closely as possible (Sushereba et al., 2021). This implies a realistic representation of the possible actors, the terrain and the socio-economic and political circumstances that may be present in the ABS (Nteun & Leedom, 2007). This can typically not be attained

if based solely on lectures but should include case studies, role plays and simulations as well (Mason, 2020).

Weick et al. (2005) explain that sensemaking is essentially about the organisation of information through communication. Accordingly, Flandin et al. (2018) advocate the use of participatory sensemaking events during the training process, which may include activities such as structured debates through prospective inquiry-led exercises. During these exercises, participants are allowed to discuss a broad spectrum of behavioural options, including those that may seem unethical.

Sensemaking training relies heavily on the inclusion of realistic scenarios and simulations. A prime example of effective simulation training is the work done by the US Army Asymmetric Warfare Group that specifically focuses on the identification of real-time operational problems, the development of solutions, and the training and development of operational forces for counterinsurgency operations (Buffaloe, 2006). A similar centre for operational, cognitive and performance enhancement based on current case-based training used in commander training in the SANDF could be established in Pretoria, which is central to most promotional courses. Ideally, this centre should be staffed by psychologists and personnel from the SANDF with operational experience. Staff at such a centre would be responsible for the development and presentation of specialised courses in resilient leadership and adaptive thinking for hybrid warfare, for example, to prepare commanders for operational missions. A second responsibility would be to develop and empower instructors who train commanders. The instructors should be skilled in techniques and methodologies needed to develop sensemaking.

Conclusion

The SANDF espouses the principles of mission command. In the ABS, it is essential that the SANDF have military leaders trained and equipped to apply the principles of mission command in the operational environment. As mission command is the preferred approach to command, all leadership training should be focused on understanding, development and practical application at all levels. A theoretical presentation of courses is essential, but not sufficient to teach the required practical skills. Since sensemaking is central to mission command in the ABS, training should focus specifically on development of this cognitive skill.

Even though the SANDF does not formally address the sensemaking skills in leadership and mission command in the ABS as a focus area in its leadership training, this does not mean that its leaders are not being prepared for the ABS. The SANDF and its commanders have performed well in operations on the African continent over the last 25 years. However, we argue that sensemaking is an essential cognitive process for successful mission command in the ABS.

Sensemaking training can be added to the current training offered by specifically focusing on the presentation and engagement of students in a wide range of diverse and realistic scenarios or simulations that reflect the ABS, using expert experience during the training,

and providing detailed feedback at different decision points in the scenario or simulation. During the training, the focus should be on the identification of cues in the scenario, how these cues point to situational assessment, the possible actions that could be taken based on the assessments, the outcomes of the presented actions, and finally ways in which the students' understanding of the situation changes after the outcomes of the actions had been considered. Realistic training – specifically in sensemaking abilities – will prepare commanders better for their task of mission command in the ABS than current training that does not purposefully focus on the development of sense-making.

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Endnotes

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