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Battlefield knowledge and barracks reality: Learning practices within the Netherlands Army

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ABSTRACT

Drawing on extensive original empirical research, this article examines the adoption of NATO's lessons-learned process within the Netherlands Army. It finds that existing accounts of military learning inadequately explain how practices shape formal learning processes and organisational learning in a military context. The case study reveals important, but hitherto neglected, routinised practitioner behaviours which enable and hinder the adoption, engagement with, and effectiveness of formal lessons-learned processes. These practices span three key dimensions: formal and informal relational dynamics, interweaving of diverse temporal orientations and structuring of the material, historical, social, and symbolic context.

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Introduction: Foregrounding processes and practices in military learning

Organisational learning at tactical and operational levels of military activity is vital for the capacity of NATO and its member- and partner-states to cope with the scope and intensity of contemporary security challenges. It matters not only for combat effectiveness, but also for budgetary oversight, democratic accountability, political legitimacy, personnel recruitment, and skill

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retention.[1] NATO has invested substantial financial and intellectual resources in institutionalising lessons-learned processes, the central mechanism for ensuring that the 'Alliance remains a successful learning organisation' through a combination of common capabilities and mindset.[2] NATO established the Joint Analysis and Lessons Learned Centre (JALLC) in 2002 to standardise and support the process, including by helping NATO member- and partner-states to develop their own lessons-learned processes, enabling member-states to contribute to the NATO Lessons Learned process and potentially adopt it.

In the context of organisational learning, adoption refers to a continuum from simple 'administrative' adoption to effective adoption involving personnel comprehensively internalising the lessons-learned process by personnel.[3] NATO recognises that improving Alliance-wide interoperability and standardisation requires more than initial formal adoption. Various tools facilitate adoption by member- and partner-states, including structured training curricula, NATO's Lessons Learned Portal, and publications including the NATO Lesson Learned Handbook. In addition, the JALLC Advisory and Training Team supports lessons-learned process implementation upon request.

However, while NATO's mature and clearly-documented model Lessons Learned Process is generally aligned with leading academic work on the fundamentals of lessons-learned process best practice,[4] the ways in which that model and its recommendations have been adopted within NATO members and

[1]On the importance of organisational learning for combat effectiveness see, for example, Aimée Fox, *Learning to Fight: Military Innovation and Change in the British Army 1914–18* (Cambridge: Cambridge University Press 2017), see also Max Visser, 'Organizational Learning Capability and Battlefield Performance: The British Army in World War Two', *International Journal of Organizational Analysis* 24/4 (2016), 573–90; on the relationship between organisational learning and budgetary oversight, democratic accountability, and political legitimacy in public sector organisations, see Dorothea Greiling and Arie Halachmi, 'Accountability and Organizational Learning', *Public Performance & Management Review* 36/3 (2013), 375–79; on the linkages between organisational learning capability, personnel recruitment, skill retention, and talent management see Tessa op den Buijs and Peter Olsthoorn, 'Human Resource Management for Military Organizations: Challenges and Trends', in Anders M. Sookermany (ed.), *Handbook of Military Sciences* (Springer 2023), 1–28, see also see Ricardo Chiva and Joaquin Alegre, 'Organizational Learning Capability and Job Satisfaction: an Empirical Assessment in the Ceramic Tile Industry', *British Journal of Management* 20/3 (2009), 323–40.

[2]NATO Lessons Learned Handbook, JALLC, Lisbon, Fourth Edition, 2022, 5.

[3]Adoption involves the act of beginning to practice or use something, signifying a deeper level of engagement beyond formal acceptance where these practices become part of routine operations. https://www.merriam-webster.com/dictionary/adoption (Accessed 11 July 2024). Hence, the adoption of lessons-learned process involves formal decisions to adopt the process, its promulgation within the organisation and adequate resourcing. Concurrently, full adoption involves the internalisation of the lessons-learned process where actors integrate the process into their daily procedures and adjust work practices to accommodate and sustain the new lessons-learned process.

[4]As Osburn et al note, a best practice can be defined as a practice which 'ranks at or near the top of effective measures. Joe Osburn, Guy Caruso and Wolf Wolfensberger, 'The Concept of "Best Practice": A Brief Overview of its Meanings, Scope, Uses, and Shortcomings', *International Journal of Disability, Development and* Education 58/3 (2011), 217.

partners span the entire continuum.[5] This article explains the adoption of NATO's lessons learned processes in enhancing organisational learning in the case of a smaller NATO member state: the Netherlands.[6]

Existing scholarship on the adoption of lessons-learned processes by NATO member-states/partner-states and its effectiveness at the tactical and operational levels has focused only on larger states including Germany, Israel, the UK, and Ukraine.[7] The neglect of smaller states' experiences of institutionalising lessons-learned processes is a substantial oversight. Smaller states can be the locus of niche innovation and specific competences, and their diverse locations and borders create a wealth of potentially useful learnings for alliance partners. They also make up a substantial proportion of NATO's military capability and are important contributors of know-how and resources to complementary EU- and UN-led operations.[8] In return, smaller states stand to benefit from effective lessons-learned processes, due to enhanced intra-organisational learning and improved alliance-wide information exchanges. Yet, as this article highlights, the Netherlands has struggled to implement the NATO Lessons Learned Process. Furthermore, the Dutch experience with the adoption of lessons-learned processes delivers findings of substantial relevance to the armed forces of other small NATO member-states with high GDP per capita, such as Denmark, Finland, Norway, and Sweden.

We argue that the literature on military learning cannot fully explain the sometimes paradoxical or surprisingly self-defeating behaviour evidenced by the case study. This article highlights instead the potential of approaches which emphasise the processes and practices that are central to the behaviours constituting organisational learning. While recent military learning research has productively applied organisational frameworks to reconceptualise learning in process-oriented terms,[9] this article demonstrates how three interacting dimensions of practices – relationality, temporality, and structuring – illuminate why and

[5]Tom Dyson, *Organisational Learning and the Modern Army: A New Model for Lessons-Learned Processes* (Abingdon: Routledge 2019); Tom Dyson and Yuriy Pashchuk, 'Organisational Learning during the Donbas War: the Development of Ukrainian Armed Forces Lessons-Learned Processes', *Defence Studies* 22/2 (2022), 141–67; and Andrzej Lis, 'Positive Organizational Behaviours as the Key Success Factors for Lessons-Learned Systems: The Case of Military Organizations', *Journal of Positive Management* 3/1 (2012), 82–93.

[6]Variation exists not only in the adoption of lessons-learned tools and processes, but also the wider institutional enablers of lesson-learning.

[7]Dyson, *Organisational Learning*; Dyson and Pashchuk, 'Organisational Learning during the Donbas War'; Robert T. Foley, Stuart Griffin, and Helen McCartney, 'Transformation in Contact: Learning the Lessons of Modern War', *International Affairs* 87/2 (2011), 253–70; and Raphael D. Marcus, 'Learning "Under Fire": Israel's Improvised Military Adaptation to Hamas Tunnel Warfare', *Journal of Strategic Studies* 42/3–4 (2019), 344–70.

[8]Håkan Edström, Dennis Gyllensporre and Jacob Westberg, *Military Strategy of Small States: Responding to External Shocks in the 21st Century* (Abingdon: Routledge 2019).

[9]See, for example, Dyson, *Organisational Learning*; Frank G. Hoffman, *Mars Adapting: Military Change during War* (Annapolis: Naval Institute Press 2021); Marcus, 'Learning Under Fire'; and Martijn Van der Vorm, 'The Crucible of War: Dutch and British Military Learning Processes in and beyond Southern Afghanistan', doctoral dissertation, Leiden Univ., 2023.

how military practitioners (dis)engage with formal learning processes. We build on recent advances examining the agency in military learning, especially Hardt's scholarship on elite practitioners' use of informal learning processes to socially construct NATO's institutional memory.[10] This article extends research attention to the persistent problems reported in tactical and operational levels of learning within national militaries by introducing a new practice-sensitive approach which, by being cast into sharp relief in a small state context, helps develop better understanding about how military practitioners perceive and respond to formal learning processes .[11]

The article proceeds in four steps. First, it outlines the core features of NATO's lessons-learned process for identifying, assimilating, validating, and diffusing military lessons and best practice. Second, it examines existing accounts of military learning and introduces a practice-sensitive framework which explores the relationality, temporality and structuring dimensions that both shape and are shaped by the 'real work' of military learning practice.[12] In the third step, we analyse a crucial mission where the Netherlands Armed Forces' lessons-learned process struggled significantly. We demonstrate how examining interconnected work practices reveals why their lessons-learned system formed only an 'administrative adoption' of the NATO Lessons Learned Process, made visible through the negative impacts learning practices had on mission success. Finally, the article reflects upon the implications of its findings for the scholarship on military learning and for the governance of military organisations.

Best practice in lessons-learned processes: The neglect of process enablers

The NATO Lessons Learned Handbook[13] distils the key components of 'best practice' in a formal lessons-learned process (Figure 1), set out as serial stages. It begins with 'Plans' to make 'Observation' of problems or potential improvements, followed by 'Analysis' to determine whether an issue becomes a 'Lesson-Identified' requiring solutions ('Remedial Action'). The process assigns clear ownership and accountability, ostensibly focusing leadership attention on prioritised issues. After approval, designated 'Task Action Bodies' develop and test 'Action Plans'. Once validated, a 'Lesson-Identified' becomes a 'Lesson-Learned',

[10]Heidi Hardt, *NATO's Lessons in Crisis: Institutional Memory in International Organisations* (Oxford: Oxford University Press 2018).

[11]Contrast, for example, the finding of Hardt that ' ... that many individuals within NATO do use the formal lessons-learned processes for identifying tactical and operational errors' (Hardt, 'NATO's Lessons', 195), seemingly because ' ... interviews suggested that the JALLC succeeds in capturing tactical and operational errors that prove useful in the field' (Ibid., 213).

[12]Scott D.N. Cook and John Seely Brown, 'Bridging Epistemologies: The Generative Dance between Organizational Knowledge and Organizational Knowing', *Organization Science* 10/4 (1999), 386–7.

[13]NATO Lessons Learned Handbook, 17–22.

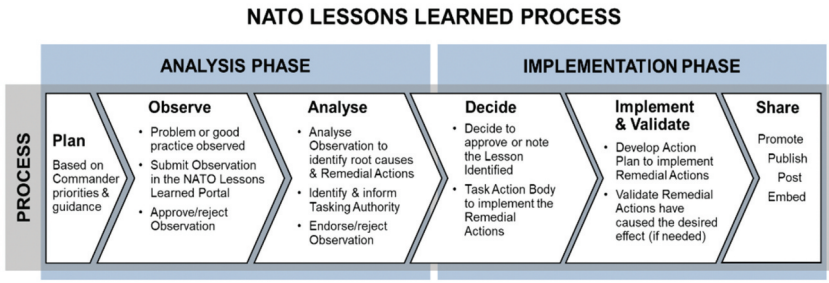

Figure 1. The NATO lessons learned process.[15]

signifying 'an improved capability or increased performance'[14] ready for sharing to stakeholders.

NATO's Lessons Learned Handbook captures fundamental features of lessons-learned processes, but the mechanistic understanding of those processes remains problematic. Even in its fourth edition, NATO's Lessons Learned Handbook presents the lessons-learned process in a functional manner, segregating actors by roles in a manner that research has shown impedes shared understanding and action.[16] Research on successfully implementing NATO's lessons-learned process remains limited. Recent NATO JALLC research emphasises the need for semantic search tools, for example, to provide ' . . . the right lessons in the right situation to the right decision-makers',[17] but makes no mention of practice, such as the promising direction examining 'absorptive capacity' concepts, as discussed

[14]'NATO Lessons Learned Handbook', 21. Argyris and Schön establish two fundamental forms of organisational learning: 'single-loop' learning, where adaptive changes occur while maintaining existing norms, routines, SOPs, organisational rules, instruments, and practices and 'double-loop' learning, where these organisational features are subject to fundamental change. Building on this framework, Catignani distinguishes between 'high-level learning', where ' . . . new frameworks of understanding and new behavioural norms are institutionalised throughout the organization' and 'lower-level' learning limited to local-level adaptation, informal learning mechanisms, 'limit[ing] itself to rectifying errors within the current system of norms, beliefs, attitudes and assumptions'. Osinga et al. provide important nuance, arguing that single-loop and double-loop learning exist on a continuum, meaning that significant learning which goes beyond simple single-loop learning can occur without being formally institutionalised. For example, changes in officer education and training practices may take place long before doctrine catches up. Such changes, while still technically adaptive, represent what may be termed 'advanced single-loop learning' through their codification in training guidelines or curriculum development. A 'lesson-learned' exceeds single-loop learning but may involve either advanced single-loop learning or double-loop learning. Chris Argyris and Donald A. Schon, *Theory in Practice: Increasing Professional Effectiveness* (San Francisco: Jossey-Bass 1974); Sergio Catignani, 'Coping with Knowledge: Organizational Learning in the British Army?' *Journal of Strategic Studies* 37/1 (2014), 37–39; Frans Osinga, James A. Russell and Theo Farrell, *Military Adaptation in Afghanistan* (Stanford: Stanford University Press 2013), 7.

[15]'NATO Lessons Learned Handbook', 18.

[16]Philippe Lorino and Damien Mourey, 'The Experience of Time in the Inter-organizing Enquiry: A Present Thickened by Dialog and Situations', *Scandinavian Journal of Management* 29/1 (2013), 48–62.

[17]Maximilian Zocholl, Anne-Laure Jousselme and Jacqueline Eaton, 'Towards a NATO Lessons Learned Ontology', 2021 International Conference on Military Communication and Information Systems (ICMCIS), The Hague, Netherlands, 2021, 1–8.

below.[18] The following section analyses existing academic frameworks' insights and gaps in understanding lessons-learned processes and proposes ways to develop a more comprehensive practice-sensitive account.

Explaining the adoption of 'best practice' in lessons-learned processes: The centrality of enacted practices and the lived performance of processes

Researchers have applied diverse theoretical frameworks to analyse military learning, including neorealism,[19] organisation theory,[20] organisational culture,[21] strategic culture,[22] and bureaucratic politics.[23] These approaches, sometimes employed in combinations, seek to offer explanation of the timely identification and adoption (or not) of military best practices.[24] Process-oriented approaches to military learning have built on these by foregrounding the capacity of leaders to take action to overcome obstacles to learning. Downie was the first to develop an explicitly process-oriented depiction of military learning, with a focus on the 'learning cycle'.[25] However, Downie and Nagl[26] emphasise institutional-level factors that moderate the otherwise-reliable performance of formal learning, identifying culture, bureaucratic politics, or path-dependency as stable background elements potentially infusing the process.

While Grissom advocated reorientating learning research to 'bottom-up' innovation, he reached the (still dominant) conclusion that genuine learning is truncated and barely informs decision-making, which remains top-down.[27] Rather than accepting this as a limit of organisational learning, we argue this tension reveals inadequacies in current frameworks for understanding military adaptation and innovation, agreeing with Griffin that military learning research

[18]Tom Dyson, 'A Revolution in Military Learning? Cross-functional Teams and Knowledge Transformation by Lessons-learned Processes', *European Security* 29/4 (2020), 483–505; Shaker A. Zahra and Gerard George, 'Absorptive Capacity: A Review, Reconceptualization and Extension', *Academy of Management Review* 27/2 (2002), 185–203.

[19]Joao Resende-Santos, *Neorealism, the State and the Modern Mass Army* (Cambridge: Cambridge UP 2007).

[20]Barry R. Posen, *The Sources of Military Doctrine: France, Britain and Germany Between the World Wars* (Ithaca: Cornell UP 1984), 44.

[21]Eric Sangar, 'The Pitfalls of Learning from Historical Experience: The British Army's Debate on Useful Lessons for the War in Afghanistan', *Contemporary Security Policy* 32/2 (2016), 230–33.

[22]Alan Bloomfield, 'Time to Move On: Reconceptualising the Strategic Culture Debate', *Contemporary Security Policy* 33/3 (2012), 437–61.

[23]Ryan Grauer, 'Moderating Diffusion: Military Bureaucratic Politics and the Implementation of German Doctrine in South America, 1885–1914', *World Politics* 67/2 (2015), 268–312.

[24]On 'integrated' theorising of military learning, see Janine Davidson, *Lifting the Fog of Peace: How Americans Learned to Fight Modern War* (Michigan: University of Michigan Press 2011), 16–19.

[25]Richard D. Downie, *Learning from Conflict: The U.S. Military in Vietnam, El Salvador, and the Drug War* (Westport: Praeger 1988).

[26]John Nagl, *Learning to Eat Soup with a Knife: Counterinsurgency Lessons from Malaya and Vietnam* (Chicago: Chicago University Press 2002).

[27]Adam Grissom, 'The Future of Military Innovation Studies', *Journal of Strategic Studies* 29/5 (2006), 926.

often applies organisational learning theory superficially.[28] Crucially, placing emphasis on strategic factors and organisational variables such as culture or bureaucratic politics ignores the continual negotiation of the meaning of experiential learning within ambiguous and contested institutional contexts, in particular at tactical and operational levels.[29] Issues of how learning processes are understood, enacted and governed by practitioners, in context and over time, are under-theorised.

We can instead view military learning as the dynamic interplay relating human improvisation to organisational adaptability.[30] This process-based approach moves beyond top-down change models, viewing learning as continuous negotiation of organisational features made to appear fixed by perhaps already-forgotten precedents or actions of others.[31] Three recent analyses provide a spectrum of overlapping approaches to better explain military learning in process terms. Dyson, Hoffman, and Van der Vorm provide process-oriented frameworks encompassing informal and formal learning methods, wherein successful bottom-up learning within armed forces may potentially facilitate tactical, operational, and even strategic level change.[32] These frameworks vary in their emphasis: from the institutional intellectual architecture and capacity investments involved in supporting good learning practices,[33] to in-operation learning,[34] and the addition of post-operation institutional learning.[35] Hoffman and Van der Vorm draw on organisational learning theory explicitly, whereas Dyson attends to the question of practices in formal learning by using an absorptive capacity[36] framework popular in management studies but overlooked in scholarship on military learning.[37]

In varying ways, Dyson, Hoffman, and Van der Vorm go beyond the concept of learning cycles[38] to consider multiple antecedent or impinging dimensions of

[28]Stuart Griffin, 'Military Innovation Studies: Multidisciplinary or Lacking Discipline?', *Journal of Strategic Studies* 40/1–2 (2017), 196–224.
[29]Torunn Laugen Haaland, 'The Limits to Learning in Military Operations: Bottom-up Adaptation in the Norwegian Army in Northern Afghanistan, 2007–2012', *Journal of Strategic Studies* 39/7 (2016), 999–1022; and Hardt, *NATO's Lessons in Crisis*.
[30]Cook and Brown, 'Bridging Epistemologies'.
[31]Ann Langley, et al., 'Process Studies of Change in Organization and Management: Unveiling Temporality, Activity, and Flow', *Academy of Management Journal* 56/1 (2013), 1–13.
[32]Hardt (2018) focuses on institutional memory within NATO itself, rather than within armed forces, and on strategic level learning, rather than learning at the tactical and operational levels of military activity.
[33]Dyson, *Organisational Learning and the Modern Army*.
[34]Hoffman, *Mars Adapting*.
[35]Van der Vorm, *The Crucible of War*.
[36]Absorptive capacity explores how improvements can be made to the activities and processes which are pre-requisites for organisations to effectively identify, absorb, and assimilate relevant knowledge. See: Raymond van Wijk, Justin J.P. Jansen and Marjorie J. Lyles, 'Inter- and Intra-Organizational Knowledge Transfer: A Meta-Analytic Review and Assessment of its Antecedents and Consequences', *Journal of Management Studies* 45/4 (2008), 834.
[37]Horowitz examines 'adoption capacity' (the capacity of states to adopt military innovations) but does not develop the organisational features of armed forces which promote adoption capacity. Michael C. Horowitz, *The Diffusion of Military Power: Causes and Consequences for International Politics* (Princeton: Princeton UP 2010).
[38]On learning cycles, see Downie (1998).

learning lessons, such as prior knowledge, cultural differences, and the impact of different time horizons on the institutionalisation and memory of learning. Their empirical accounts are rich, aligning with Kollars' depiction of the co-constitutive relations between 'low-end' learning and institutional needs[39] and the scholarship of Kollars et al highlighting the 'iterated dialectic of learning that occurred from within isolated communities of practice' in the creation of US Air Force practices of daylight bombing during World War 2.[40] This growing emphasis on how routine negotiations of meaning unfold in ways that may change institutional practices suggests that research should investigate what comprises those routines and the shared understandings they represent. Without this sensibility, we risk mischaracterising actors as fixed 'types' with stable interests and predispositions, and of misidentifying lessons-learning practices as adequately described by documented workflows and formalised accountabilities.

Hardt's scholarship on strategic level-learning about crisis management within NATO made an important advance towards unpacking the dynamic interrelationship between structure and agency. Hardt finds that while deficits and flaws in the design of formal learning processes incentivise practitioners to seek out informal learning opportunities, secretariat elites also play a key role in shaping learning capability by championing informal processes.[41] She states that non-strategic learning about errors can ' … more easily be separated from the individuals and states committing them', and that ' … formal learning processes can in fact be quite useful for identifying tactical best practices and tactical errors'.[42] Yet, this view understates how practice-related factors drive extensive informal and semi-formal learning at tactical and operational levels, as our study demonstrates.

Tactical and operational learning: Towards a practice account

Lessons-learning is well-suited for a practice analysis. Initial case study research highlighted that participants do more than just vary how they perform routine tasks. That itself is not new. However, if the research focus remains on formal processes and ways to mitigate such informal variance, it risks thinking of learning as involving fixed units of knowledge that are simply identified, classified and transmitted through routine procedures, rather than something that is actively created and shared.[43] The next section develops a novel practice-sensitive

[39]Nina Kollars, 'Military Innovation's Dialectic: Gun Trucks and Rapid Acquisition', *Security Studies* 23/4 (2014), 787–813.
[40]Nina Kollars, Richard R. Muller and Andrew Santora, 'Learning to Fight and Fighting to Learn: Practitioners and the Role of Unit Publications in VIII Fighter Command 1943–1944', *Journal of Strategic Studies* 39/7 (2016), 1046.
[41]Hardt, *NATO's Lessons in Crisis*, 201–02; Talmadge (2016) examines organisational practices in authoritarian armies, but does not focus on practice theory, or learning in a military context.
[42]Hardt, *NATO's Lessons in Crisis*, 18–19.
[43]Martha S. Feldman and Brian T. Pentland, 'Reconceptualizing Organizational Routines as a Source of Flexibility and Change', *Administrative Science Quarterly* 48/1 (2003), 94–118.

framework for understanding how military organisations learn at the tactical and operational levels. This framework takes into account the actual practices of people and groups involved, improving analysis of how lessons-learned processes are carried out in real-world situations. At these levels, military activity is essentially technical, involving multiple disciplines of technicians engaged in highly procedural work – routines[44] – long recognised as having a significant informal character.

Our approach is inspired by Orr's seminal study of informal practices inherent in the mundane work of photocopier technicians employed by Xerox, the dominant supplier of complex, expensive photocopying in the 1980's.[45] Xerox's corporate logic relied on comprehensive technical manuals and standardised procedures for its technicians to ensure consistent quality control across its product range. Yet, Orr uncovered a hidden world of technician practices. Top-performing technicians excelled through storytelling about past repairs, sharing nuanced insights about machine quirks, customer idiosyncrasies, and creative workarounds absent from, or often in contradiction to, official documentation. Orr identified fundamental and highly-coordinated work disguised by its seemingly informal nature, revealing deeply contextualised learning practices that he conceptualised as a triangular relationship between person, machine, and the customer. He concluded that ' … technical knowledge is a socially distributed resource stored and diffused primarily through oral culture'.[46] His work highlights how signature practices – in this case, talk – constitute learning outside of and sometimes in conflict with formal knowledge structures. We can understand this disciplined yet non-formal learning as being shaped by the community's use of relations (who may be trusted – fellow technicians; novices versus experts), use of time to determine interactions (institutionalising lunchtime conversations), and how they were structured (storytelling, customer rituals). It is these often-hidden workings of practice in military learning that this paper investigates.

The article follows Cook and Brown[47] in defining 'practice' as ' … the coordinated activities of individuals and groups in doing their "real work" as it is informed by a particular organisational or group context'; hence the enactment of processes is ' … action informed by meaning' generated in part by participation. As Adler and Pouliot state, this definition underscores that informal behaviour, which formal processes typically seek to eliminate or contain, is not just something that happens within an institutional context but is partly constitutive

[44]Unlike the work of elites, much activity at the tactical and operational levels is routine. Practices are closely-related to organisational routines; the latter defined by Feldman as task-oriented sequences that organisations institutionalise to ensure consistency and predictability. Routines can be seen as a subset of practices, meaning that while every routine is a practice, not all practices qualify as routines. Martha Feldman, 'Practice Theory and Routine Dynamics' in Martha Feldman, et al. (eds.), *Cambridge Handbook of Routine Dynamics* (Cambridge: Cambridge University Press 2021), 23.

[45]Julian E. Orr, *Talking about Machines: An Ethnography of a Modern Job* (Cornell: Cornell University Press 2016), xiii.

[46]Orr, *Talking about Machines*, xiii.

[47]Cook and Brown, 'Bridging Epistemologies', 386–87.

of that context.[48] Feldman, drawing on Giddens and Bourdieu, links that local activity to its effects at an institutional level, noting that ' . . . practice is not only what people do; it is also the participation of that doing in the ongoing creation and recreation of institutions and social systems'.[49] Thus, practice research foregrounds the socio-psychological aspects of work, the networks of activity that organise that work and make sense of it, in context, for the multiple sub-communities of which complex organisations such as the armed forces are composed.[50] Practice sensibility enables the dimensions of active participating of individuals and sub-communities in learning to be discerned – the 'relationality, temporality, [and] situatedness' which constitute enacted practice.[51]

Military learning practices: Relationality, temporality and structuring

This article identifies three distinct but interrelated dimensions of the networks of activity constituting military learning: the 'relationality', 'temporality' and 'structuring' dimensions of practice. We derived these dimensions abductively, prompted by the practice research cited, refined through reflective data analysis and validated through interview partner conversations during our empirical study.[52] These analytical distinctions describe and explain the dynamic, intertwined practice features affecting how organisational learning processes are enacted in 'real work'. They allow us to focus on how learning practices emerge, persist, change and make themselves felt at organisational levels within and through the relations, use of time and contextual structures that shape learning.

'Relationality' refers to practices of access, communication, collaboration, and knowledge-sharing across teams, professions, and hierarchies, and between the armed forces and civilian leadership. It also refers to interorganisational practices of access, communication, collaboration, and knowledge-sharing, such as between the Lessons-Learned Branch and NATO's JALLC. This dimension highlights how formal and informal networks facilitate or hinder learning, and how power dynamics shape the flow of information and knowledge. As Turner emphasises, knowledge production through learning depends on complex sets of organisational relationships between actors, tools, and systems.[53] Adler and Pouliot highlight the relational foundations that enable patterns of action to be performed competently and with significance. For political elites, these include acquiring and

[48]Emanuel Adler and Vincent Pouliot, 'International Practices', *International Theory* 3/1 (2011), 1–36
[49]Feldman, 'Practice theory and routine dynamics', 21.
[50]Silvia Gherardi, 'Community of Practice or Practices of a Community?', in Steven Armstrong and Cynthia Fukami (eds.), *The Sage Handbook of Management Learning, Education, and Developmen*t (Thousand Oaks: Sage 2009), 528.
[51]Haridimos Tsoukas, 'Don't Simplify, Complexify: From Disjunctive to Conjunctive Theorizing in Organization and Management Studies', *Journal of Management Studies* 54/2 (2017), 136.
[52]Funded by the ESRC (grant ES/V004190/1). For information on research design, including the abductive approach, interview partner sample selection and thematic analysis, please see online supplementary material.
[53]Stephen Turner, *The Social Theory of Practices: Tradition, Tacit Knowledge, and Presuppositions* (Chicago: University of Chicago Press 1994).

deploying capabilities for informal interactions, back-channel communications and interpreting the unspoken understandings that constitute bargaining practice.[54] At a more mundane level, when formal processes do not foster the social relationship practices seen as necessary, or if they disrupt existing practices of social relations, actors may resist or only partially engage with them. Military professionals talk frequently about the relational aspects that influence whether a formal process supports or detracts from their sense of shared purpose. For instance, if strained relationship practices between units or sub-organisations lead an officer to doubt the commitment of subsequent participants in the process chain, the (typically double-hatted officer) can readily justify deprioritising the formal imperative to invest their time to share lessons.

'Temporality' refers to how practices create differentiation in time horizons and work rhythms that shape learning processes.[55] In complex organisations like militaries, multiple processes with different tempos and deadlines often overlap, creating dependencies and alignment challenges for coordination and learning.[56] Time is dynamic and inherently contested; something that is allocated, managed, traded-off against and disputed, in the performance of work. Locally, a unit may share uniform temporal practices with a shared sense of pace and sequencing appropriate for learning – their battle rhythm. At a wider organisational level, however, multiple temporal practices influence the allocation of attention and resources according to different 'clocks', affecting what can be learned within a seemingly uniform organisational process. Hence, a practice lens reveals, first of all, the influence that individuals or groups exert in applying temporality practices. For example, we identify a practice of 'immediate action' which can undermine long-term thinking and impact the allocation of resources and leadership attention to the lessons-learned process. Second, this sensitivity highlights the impact of intersecting temporality practices on the adoption of lessons-learned processes by attending to how actors experience and manipulate temporal intersections. For instance, a HQ might impose artificial deadlines to focus attention on certain lessons, deprioritising others.

Finally, learning occurs within contexts experienced as pre-structured by both tangible elements (such as material resources, forms, promotion processes, hierarchy, doctrine) and intangible factors (sanctioned vocabularies, personal histories, group norms, collective routines). These 'structuring' dimensions appear as taken-for-granted givens that simultaneously enable and constrain action in seemingly predictable ways, as current literature emphasises. They may even be effectively invisible, products of history that are no longer questioned or even noticed.

Yet these elements are realised through human action. Bueger and Gadinger emphasise the materiality of the context in which action occurs, citing Pickering's

[54]Adler and Pouliot, 'International Practices'.
[55]Adler and Pouliot, 'International Practices', 6
[56]Christian Bueger and Frank Gadinger, 'The Play of International Practice', *International Studies Quarterly* 59/3 (2015), 453.

dictum that the world is 'continually doing things, things that bear upon us not as observation statements upon disembodied intellects but as forces upon material beings'. These 'doings' by the external social or material world are experienced as enabling and constraining conditions on action, including the language deemed legitimate to describe it. However, as 'doings' they are better understood as potentially negotiable rather than inert, and thus more malleable to reimagining and reinterpretation than conventionally depicted. Actors retain agency even within highly constrained environments; for example, when an orthodox interpretation of a situation is changed by changing vocabulary and other discursive symbols. Through curiosity and adaptability, they can draw on practice repertoires to reimagine and restructure situations, demonstrated, as Kollars highlights, by the 'creative soldier's use of a cheap toaster'.[57] Structuring practices are, therefore, defined as the material, social, historical, and symbolic practices of individuals or groups, through which actors experience, reproduce and reshape their professional contexts.

These three analytical distinctions allow tactical and operational learning processes, often dismissed as mundane, to be examined and explained in ways that shine a light on the day-to-day 'real work' of practice. Our case study reveals multiple aspects of each dimension, further delineated in Table Three,[58] that illuminate how actors navigate between pre-structured constraints and opportunities for reimagining situations, ultimately shaping organisational learning outcomes.

A practice lens on the effective adoption of lessons-learned processes: Lesson-learning during the Netherlands Armed Forces' ASIFU experiment

Following the collapse of the Soviet Union, the Netherlands Army faced expeditionary campaigns requiring strong learning capabilities spanning counterinsurgency, peacekeeping and stabilisation. These included demanding operations in the former Yugoslavia as part of UNPROFOR (1992–95), Iraq (2003–2005) and co-leadership of the campaign in Uruzgan province in Afghanistan (2006–2010), building a notable intelligence capability.[59] In 2005 the Ministry established a formal lessons-learned process and Lessons-Learned Branch, an attempted adoption of JALLC processes for observation collation, lessons-identified analysis

[57]Kollars, 'Military Innovation's Dialectic', 78.

[58]Table Three (online supplementary material), provides selected quotations which illustrate the sub-dimensions by showing how practitioners enacted the practice dimensions – the concrete 'doings and sayings' that constituted learning practices within the organisational context. Given the limits of paper wordcount and wide scope of relational, temporal and structuring sub-dimensions, the table cannot provide an exhaustive list of the sub-dimensions of practice, rather it illustrates them with key themes emerging from our thematic analysis.

[59]Martijn Kitzen and Willem Vogelsang, 'Obtaining Population Centric Intelligence: Experiences of the Netherlands Military Presence in South Afghanistan', in Gerard Lucius and Lucien S. Rietjens (eds.), *Effective Civil-military Interaction in Peace Operations* (Berlin: Springer 2016), 77–88.

and communication of validated lessons-learned. On paper, lessons-learning spanned mission assessment, monitoring and adjusting current operations, through to the identification of best practices and institutional-level deficiencies.

By 2010, converging events triggered political directives that changed organisational adaptation demands. Domestic politics ended the Afghanistan deployment and national policy shifted back to UN collaboration, coinciding with post-2008 financial crisis budget reductions. This UN-focus began with small exploratory missions such as in Lebanon (2006–08), followed in 2014–19 by a highly-sophisticated intervention in the challenging Mali mission of stabilisation and reconstruction (MINUSMA). This commitment, centred on the provision of specialist intelligence resources modelled on earlier learnings, represented a substantial, high-profile contribution. Yet, within three years that strategic experiment was terminated, and a troubled transition effected. This presents a valuable episode of an attempted application of organisational lessons-learning to a complex context, providing the opportunity for new insights into what effective adoption of the NATO Lessons Learned Process requires.

The All-Sources Intelligence Fusion Unit (ASIFU), established in 2014 within MINUSMA, marked the first significant integration of Western military intelligence into UN peacekeeping. Drawing from Dutch NATO experience in Afghanistan, the political ambition for ASIFU was to similarly deliver comprehensive intelligence beyond military matters, analysing Mali's political, economic, and social dynamics. The unit was also designed to operate independently of UN intelligence structures, staffed mainly by Western personnel, protected by Dutch Special Forces, and equipped with advanced capabilities like UAVs and sophisticated information systems, sourced from the Netherlands.

However, ASIFU quickly faced multiple operational challenges: conflicts between Western and African forces' priorities and capabilities, competing demands between immediate intelligence needs and strategic analysis goals, difficulties in coordinating with civilian UN agencies, and strains on Dutch military resources. These challenges led to ASIFU's integration into MINUSMA's standard intelligence structure (U2) by late 2017. Dutch contributions shifted to conventional peacekeeping roles, with intelligence officers supported by Long-Range Reconnaissance Patrol Task Group infantry rather than Special Forces. ASIFU's ambitious attempt to transform UN intelligence practices through specialised capabilities ultimately fell short of its transformative goals. The academic literature offers a variety of perspectives on ASIFU's deficiencies,[60] with Rietjens and de Waard drawing on organisational design concepts to explain potential

[60]Sebastiaan Rietjens and Erik de Waard, 'UN peacekeeping intelligence: The ASIFU experiment', *International Journal of Intelligence and Counterintelligence* 30/3 (2017), 532–56; Sebastiaan Rietjens and Chiara Ruffa, 'Understanding Coherence in UN Peacekeeping: A Conceptual Framework', *International Peacekeeping* 26/4 (2019), 383–407; and Chiara Ruffa and Sebastiaan Rietjens, 'Meaning Making in Peacekeeping Missions: Mandate Interpretation and Multinational Collaboration in the UN mission in Mali', *European Journal of International Relations* 29/1 (2023), 53–78.

improvements,[61] while Ruffa and Rietjens apply sociological frameworks of meaning-making and interpretation to analyse how peacekeepers implemented their mandate.[62] Ruffa and Rietjens highlight how personnel attempted to replicate NATO approaches in the UN context, struggling with differences in organisational culture and practices both within the Netherlands military and in encounters with UN ways of working, but without close examination of learning.

A minority of research foregrounds aspects of the organisational learning process as material to the origins and fate of ASIFU. Notably, de Waard et al. argue that complex missions require sophisticated learning capabilities.[63] They explain the capacity for such learning as being shaped by organisational structure both within and between institutions, with multiple stakeholders complicating that organisational learning. Their account applies complex adaptive systems theory to examine interactions between structural and learning properties of actors and units navigating competing demands. This article develops the shift from explanations based on formal structures and processes to attend to the situated, complexly interrelated practices of participants, opening new possibilities for understanding the dynamics of when and how learning processes are adopted.

The following sections of the case study demonstrate how the living, interactive dimensions of learning practices are central to understanding the limited success of lessons-learned processes during ASIFU. They show how, despite the establishment of formal lessons-learned processes, learning remained 'stove-piped', localised and focused on adaptation due to the impact of practices within and imposed upon the ASIFU mission. The adaptive practices which took precedence, while effective for local problem-solving, ultimately hindered the development of civil-military alignment, negatively impacting mission success.

The design and evolution of ASIFU 2013–2015: The impact of relational, temporal and structural practices on lessons-learning and mission success

Units gained considerable expertise of potential relevance to ASIFU from NATO operations, particularly in intelligence, and from UN operations in the former Yugoslavia. However, this learning stayed localised – direct, experiential learning, transmitted directly between soldiers and units – as established relationality practices of self-reliance and localised, community-based learning took precedence. While these practices

[61] Rietjens and de Waard, 'UN Peacekeeping Intelligence'; and Rietjens and Ruffa, 'Understanding Coherence'.
[62] Ruffa and Rietjens, 'Meaning Making'.
[63] Erik de Waard, et al., 'Learning in Complex Public Systems: The Case of MINUSMA's Intelligence Organization', *Public Management Review* 25/6 (2023), 1039–58.

helped units adapt within institutional constraints of budgets and schedules, they also undermined engagement with the lessons-learned process following its creation in 2005; few instances of successful adaptation were formally processed as lessons-learned. Consequently, the 2013–14 designing of ASIFU failed to integrate past learnings about the demands of partnership with the UN and non-NATO armed forces. As multiple officers involved in ASIFU noted, 'we forgot how to work with the UN'.

Dutch officers setting up ASIFU drew on cultural briefings and reconnaissance visits to build shared identity with UN counterparts, supported by political agreement that Dutch nationals would hold the first four MINUSMA Deputy Chief of Staff Operations positions. But as ASIFU operations intensified, military analysts struggled to bridge professional divides with their UN counterparts. Practices of localised learning and systemic failures to capture learnings from past Dutch experiences in the UN context meant that this foreseeable problem had not been adequately anticipated.

Dutch personnel proved unable to respond to the persistent gaps between Dutch and UN professional standards. A major problem was that officers rarely engaged with the lessons-learned process, their unwillingness stemming from both localised learning practices and the impact of divergent temporal practices between civilian and military practitioners. While UN civilian staff and Netherlands Ministry of Defence civil servants and political figures operated on multi-year horizons, military rotations created six-month learning cycles for troops in the field. This divergence in temporal practice created a stark contrast between mission tempo and institutional support, sharpening mission leaders' views that the formal lessons-learned process was secondary to immediate operational demands: 'Military rotation durations are too short and that impedes learning; you have to be very quick, because otherwise you will not be able to see the results of your improvement'.[64] This temporal disconnect manifested in bureaucratic delays – the 'slow, often invisible' implementation of remedial actions experienced by personnel.

Further temporal practices deepened this civil-military disconnect. Officers at tactical and operational levels of military activity maintained a strongly-held practice of immediate action with limited attention to longer-term thinking, prioritising adaptation over processes that could deliver enduring lessons for the wider armed forces. The practice of immediate action significantly influenced commanders' choices; such as in the context of headcount constraints, to leave LLSO roles unstaffed as bolt-ons to other roles, limiting possibilities for institutional learning. As an official independent evaluation of

[64]Interview, Group H. See Table One in the supplementary material on research design for description of interview groups.

the Mali mission concluded, when over-relied upon ' . . . the armed forces' can-do attitude is thus a weakness rather than a strength', compensating only partially and inconsistently for poor institutional-level learning and application of lessons to mission planning.[65]

The impact of these divergent temporal practices was amplified by poor communication practices between the Ministry of Defence and the mission, especially the lessons-learned process. Contributors of vital observations received neither feedback nor roles in evaluation, including commanding officers whose end of deployment reports were key evidence. All eight Dutch commanders interviewed agreed that, while peer-level transfers were diligent, institutional-level responsiveness was lacking: ' . . . when it is time for me to file my Alpha-1200 [end of rotation report], I don't know if anyone in HQ or the Ministry is paying attention'.[66]

Despite ASIFU's political profile, established methods for information exchange between the Lessons Learned Branch and senior military leadership impeded timely knowledge sharing that could have fleshed-out ASIFU's complex challenges. Senior leadership maintained conventional communication and temporal practices, widening the gulf between field experience and institutional knowledge. Communication and collaboration practices also impacted the JALLC's capacity to support the Dutch Lessons Learned Branch. The Branch officers feared 'showing all our laundry', leading to very few lessons being shared with the JALLC.[67] Meanwhile, JALLC's Joint Analysis and Training Team maintained a 'wait to be asked' practice, leaving successive Lessons-Learned Branch Heads unaware of potential opportunities to collaborate for training and advice.[68] These collective practices of limited engagement and rigid adherence to routines hindered the provision of learnings that could have improved senior leadership's communication with the Ministry and external stakeholders.[69]

Structuring practices for career development further complicated matters. Mission leadership roles represented crucial promotion opportunities, creating pressures that could undermine learning. Some commanders demanded large-scale actions divorced from mission needs, which junior intelligence officers interpreted as 'This is the whole Commander thing: "We want to achieve something!"' Such directives could leave junior officers fearing for their psychological safety; two intelligence Captains reported 'I felt 100% isolated'.[70] Career structuring practices ignored whether officers contributed to lessons-learned processes, in evaluating promotion applications,

[65]'Deployment of Dutch Forces on UN Mission to Mali' (Netherlands Court of Audit), https://english.rekenkamer.nl/publications/reports/2018/06/13/deployment-of-dutch-forces-on-un-mission-to-mali.
[66]Interview Group G.
[67]Interview, Group D.
[68]Interview, Group M.
[69]Interview, Group A.
[70]Interview, Group J.

sometimes resulting in environments where learning became subordinated to personal advancement. As one experienced officer observed, the intersection of career structuring practices and resource allocation practices could distort learning: 'The head of ASIFU had realised it was sexier, it was better for his career, if he wrote intelligence analyses for the [Dutch] Head of Mission instead of [UN Force Commander]'.[71] This redirection of analytical resources diminished the mission's capacity to learn and adapt intelligence operations to evolving threats and partner complexities.

By mid-2015, the impacts of relational, temporal and structuring practices on learning, including the effective operation of the lessons-learned process, were creating widening gaps between operational reality and the institutional military, undermining ASIFU. While the institutional framework remained intact, personnel increasingly relied on learning that made sense to them professionally in the absence of relevant formal lessons-learning. This growing divergence from their intended function set the stage for mounting tensions ahead.

Growing practice tensions and the demise of ASIFU (2015–2017)

ASIFU's implementation revealed increasing tensions between the formal lessons-learned processes and military learning practices with negative repercussions for mission success. Semi-formal learning practices evolved to fill the gaps left by the misfiring lessons-learned process, with units developing local approaches that emphasised communication and interaction: 'all the dashboards in the world don't tell you anything…', as an NCO involved in the lessons-learned process stated, "We Dutch are a duct-tape culture".[72] These approaches reflected the relationality practices of self-reliance, community-based learning and temporality practice of immediate action. The practice dimension here is key, for while self-reliance and community-based learning are values, they were sustained by how individuals and groups actively practice them in varying contexts. Informal learning networks became increasingly important for maintaining effectiveness, reflecting both practical necessities and deliberate resistance to formal integration. A typical unit leader comment was: '[B]ecause organisational learning is very weak, I relied almost 100% on my people and they relied a bit on me to get the most from relevant experiences from Afghanistan and Iraq operations'. [73]

The main concerns of interlocutors involved with mission planning and deployment were not only the relevance and trustworthiness of lessons, but also their timeliness. For these concerns, semi-formalised and informal direct

[71]Interview Group H.
[72]Interview, Group I.
[73]Interview, Group G.

sharing of tacit knowledge from multiple rotations and close mentoring was consistently reported as the essential component. Intensive semi-formal sharing occurred at handover moments; the lessons-learned process was rarely accessed.[74] For life-threatening issues, local chains of command bypassed lessons-learned processes entirely. Technical units exemplified the consequent challenges for institutionalising learnings. Most maintained isolated databases 'not reachable for non-technical people',[75] reflecting the practical necessities of timeliness and trustworthiness, as well as practices of self-reliance and community-based learning.

For example, helicopter maintenance teams took lessons-learned training and built their own database and lessons-learned process. However, the central lessons-learned process struggled to integrate this and other similar initiatives by technical communities as a network of potentially complementary learning processes. This was not a new issue. As the Commander of a MINUSMA rotation observed:

You expect the learnings to be fed back into the loop for decision-making processes. But my experience is that I really see no change over the life cycle of these two missions [Afghanistan; Mali], meaning no changes in nine years. And that is kind of concerning when you are out in the field.[76]

At higher ranks, discursive structuring practices in communicating bottom-up learnings to policy levels affected the possibilities for better shared civil-military understanding. As one General explained: 'I went to the CHOD, and I said that, up to now, when we bring a mission to Parliament, we write down what the politicians would like to read. In this mission, you need to write down what is the military situation on the ground, the reality and what do we expect'.[77]

The impact of practices – especially the practice of immediate action – meant that the lessons-learned process was too under-resourced to hunt effectively for potential lessons-identified. Consequently, decision-making and the communication of bottom-up learning to senior levels continued to be made based on incomplete information, in the view of all senior officers interviewed. As one senior officer emphasised:

'Every NLD staff officer that I know has not been interviewed about their experiences in Mali. The J7 lessons-learned process interacts only at command level. All the hundreds of staff officers we have deployed over the years are never heard. No more than a few of them have ever been interviewed, none of that knowledge is stored, and we never know what knowledge they

[74]Interviews, Groups G, H, I.
[75]Interview, Group Q.
[76]Interview, Group G.
[77]Interview, Group A.

have'.[78] The failure of the lessons-learned process to help the institutional military keep pace with operational challenges left the Netherlands increasingly struggling to support ASIFU requirements for both personnel and sophisticated equipment. In 2017, the Apache helicopters were withdrawn and Brigades faced substantial difficulties maintaining force readiness while deploying key personnel overseas, reducing both the radius of intelligence operations and ability to maintain ASIFU staffing. Tactical doctrine also struggled to keep pace with MINUSMA's challenges. However, tactical level learning in training worked well, largely due to relationality practices of Observer-Trainer-Evaluator personnel in boundary-spanning across units to rapidly evaluate lesson application and convene remedial actions.

But, overall, the accumulating tensions and misalignment between deployed forces and the Ministry created by the impact of different practice dimensions on learning became increasingly unsustainable. In December 2017 ASIFU was terminated, merging with the U2 intelligence staff. A senior officer noted tellingly of ASIFU's legacy: 'For the UN it was a negative learning – to not have an ASIFU structure and not fill it with Europeans!'[79]

Mission transformation and breakdown 2018–19: The impact of evolving practice tensions

Tensions between misaligned practices continued to undermine organisational learning and mission effectiveness in the period between ASIFU's demise and the end of Dutch contribution to MINUSMA in May 2019. Relational practices immediately impacted learning and sharing during the transition from independent intelligence hub to the merged U2 staff under UN command, and from Special Forces to Reconnaissance data collection. As one senior officer described:

'[Following eight Special Forces rotations] we really felt like we set up this mission and then the reconnaissance guys came in and immediately. . . there was just a lot of infighting: "you're not following protocols; this is not how this mission was designed!" . . . [incoming] personnel were very critical'.[80]

These relational challenges were amplified by the weaknesses of the lessons-learned process. The shift to conventional operations introduced new operational challenges as 'UN commanders and other force commanders resorted to familiar practices of intelligence: formal current intelligence, formal security related intelligence'.[81] Yet, the ongoing inability of HQ-level lessons-learned personnel to receive, analyse and communicate pressing requirements for more resources within

[78]Interview, Group H.
[79]Interview, Group M.
[80]Interview, Group J.
[81]Interview, Group C.

the Ministry meant that the reduced mission had the material means to operate within only a narrow geographical radius from base. The consequences of this had become clear by rotation seven: 'intelligence didn't mean much' and units 'never received a single intelligence task from Force Commander'.[82] By this point in the mission motivation for filling in lessons-learned reports had hit rock bottom, as a result of the poor enactment of the lessons-learned process throughout the mission. One senior officer deployed during this transitional period captured how practices of self-reliance, community-based learning, immediate action and poor communication fostered deeply-engrained resistance to formal learning processes:

'We like to learn lessons every time, you know (laughs). And lessons-learned? After we have done a mission, we write a report and it's put in the database; but then, if you go on the same type of mission, a lot of people relearn the lessons again and start from scratch, or think "my predecessor was an asshole so I can do better".'[83]

These informal lesson-learning and localised knowledge-sharing practices proved vulnerable during the transition period as diminishing professional development opportunities affected retention. One officer noted: 'Some left, like one of my colleagues who was my second-in-command in the [Reconnaissance rotation] and then lead Planner during [subsequent rotation], he left the Army and took all the experience with him'.[84] This pattern, worsened by the impact of career structuring practices that distort promotion processes and professional development, emerged repeatedly in interviews highlighting how informal networks, while effective in the short-term, remained fragile under pressure.

Although military learning practices had a damaging overall impact on organisational learning, the case study highlights how individual agency can drive substantial positive organisational change. Attention to practices reveals nuanced patterns in adaptation and the capacity to challenge cultural norms. While younger personnel were exposed to storytelling from veterans of Afghanistan and Iraq during pre-deployment training, most stated these war-fighting narratives didn't create combat-focused predispositions. Instead, junior officers demonstrated aptitude for population-centric, 'non-kinetic' operations. This adaptation involved significant leadership commitment; as one commander noted: '…those aspects were new for a lot of operators. As a result, I sometimes had to be directive with team leaders, which we're not used to; we ordinarily have a self-supporting ethos'.[85] This commitment to challenging dominant sense-making practices and expressions of personal

[82]Interview, Group G.
[83]Interview, Group C.
[84]Interview, Group G.
[85]Interview, Group G.

histories highlights the importance of analysing actors' interactions as co-constituting their reality rather than simply responding to it.

Discussion: Practice evolution and the adoption of lessons-learned processes

The ASIFU case study showcases that successful adoption of formal lesson-learning processes requires understanding about how learning practices operate and evolve through interactions between diverse professional communities, different temporal rhythms, and formal/informal work structures. The failure of the lessons-learned process impacted both organisational learning and mission success in ASIFU, with longer-term effects on military effectiveness. Commanders doubted that learnings from ASIFU would be retained in institutional memory for future UN missions. Furthermore, officers involved with threat forecasting added that struggles to learn to support MINUSMA – scrambles that reflected forgotten learnings from challenges with Uruzgan – meant 'we forgot how to fight Russia!'[86]

The framework of relationality, temporality, and structuring practices reveals why formal learning processes struggled – not simply due to structural rigidities, resource constraints, or cultural differences – but because they failed to account for how learning unfolds through complex webs of practice. While previous research identifies challenges like understaffing or institutional memory as separate problems, our framework reveals how these apparently distinct issues emerge from individual, but also interacting, practice dimensions. For example, the Dutch understaffing of LLSO roles substantially reflected the intersection between temporal practices (of 'immediate action' and rotation cycles, creating knowledge gaps) and structuring resource allocation practices. Yet, it was also influenced by relational practices of self-reliance and community-based learning leading to distrust in formal processes and career structuring practices which did not sufficiently value contributions to the lessons-learned process.

The isolation of learning within organisational silos, artificial separation between formal and informal learning, and persistent gaps between operational realities and strategic adaptation emerged from misaligned practices rather than just poor design or resources. These misalignments meant that ground-level experiences went uncaptured, unit-level innovations remained isolated, while ministerial-level processes and some institutional military processes became disconnected from operational needs. Without evolution in governance practices to attend to misaligned practices, military organisations risk not just repeating tactical or operational mistakes but failing to learn at a fundamental level.

[86]Interview, Group O.

Conclusions: The dynamic 'internal life' of lessons-learned processes and implications for the governance of military learning

This article examined why smaller NATO militaries struggle with comprehensive adoption of formal lessons-learned processes, even when possessing both resources and motivation. Through analysis of the Netherlands military's application of learning in designing and implementing their ambitious but unsuccessful UN peacekeeping intelligence initiative, we demonstrate that understanding learning process adoption requires attention to three interrelated practice dimensions – relationality, temporality, and structuring – that fundamentally shape how learning unfolds in military organisations.

These dimensions manifest as dynamic and highly-influential elements that practitioners actively negotiate in their daily work. When ASIFU commanders pursued 'signature operations',[87] this triggered mutually-reinforcing constraints on learning: career practices prioritised visible achievements over reflection, compressed timelines prevented deep analysis, and knowledge networks fragmented as units competed rather than shared insights. When intelligence officers became isolated after challenging command decisions, rapid rotations prevented trust-building while career incentives discouraged questioning priorities. Yet there were glimpses of how practice dimensions could help to overcome systematic barriers to lessons-learning. A Ministry official's observation that 'Lessons-learned comes naturally to me as a Navy person and as a flyer'[88] reflects deeper alignments: relational practices embedded peer review into operations, temporal practices institutionalised reflection in flight protocols, and career practices rewarded knowledge sharing. These dimensions can mutually reinforce: standardised rhythms sustain relationships despite operational pressures, career incentives maintain knowledge networks under resource constraints, and professional identity recasts contributing to formal learning as denoting excellence rather than bureaucratic burden. This practice-sensitive analysis explains why units with similar resources and cultural attributes may embrace lessons-learned or struggle; though positive alignments remained rare.

Our practice-sensitive framework advances military learning research in three ways. First, it moves beyond viewing organisational culture, bureaucratic politics, or resource constraints as fixed determinants, revealing instead how actors actively perpetuate or reshape these factors, constrained by the practices of others. Second, it identifies opportunities for improving learning processes by fostering collaborative networks, aligning temporal rhythms, and challenging structural constraints. Third, it provides analytical tools by

[87]Interview, Group E.
[88]Interview, Group B.

delineating sub-dimensions that enable systematic examination of learning practices across organisational contexts.

These insights carry implications for scholarship and practice. For researchers, they demonstrate the value of examining learning in ways that reveal its negotiated character across relational, temporal and structural dimensions. These insights can be complementary to existing explanations of military change, for example neo-classical realism, enabling richer understanding of the interplay between material and ideational structural factors and the agency of individuals.[89] For military practitioners, the article's findings suggest that effective adoption demands attention not just to formal structures but to the practices through which learning occurs. As one commander concluded: 'For fundamental lessons-learned on the conceptual and organisational levels of the armed forces, you need to completely change the governance of the MoD. Otherwise, you will never get the flexibility, which is at the bottom [rating] already. . .That worries me'.[90] Such changes should include supporting cross-functional teams,[91] informal collaborative forums such as 'incubators' which enable sustained questioning of perceived constraints,[92] and institutionalising means for elevating problematic issues, such as performance and risk review reporting mechanisms.[93]

Future research should investigate how practice dimensions interact and influence learning outcomes across different military contexts and how organisations might better align formal processes with existing learning practices. Research could explore how emerging technologies, and organisational forms enable novel learning patterns. By illuminating the 'internal life' of lessons-learned processes through attention to practice dimensions, this article provides tools for understanding and improving learning adoption in military contexts. The key challenge is developing governance approaches that complement, rather than conflict with, the complex dynamics of learning which unfolds in practice.

Disclosure statement

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[89]Gustav Meibauer, et al., 'Rethinking Neo-classical Realism at Theory's End', *International Studies Review* 26/1 (2021), 275.
[90]Interview, Group A.
[91]Cross-functional team brings together representatives from different functional areas at a mid-level of the organisational hierarchy to enhance lateral coordination and integration, including in organisational learning. Cross-functional teams can strengthen lessons-learned process effectiveness, especially the 'remedial action' stage. Dyson, 'A Revolution in Military Learning', 489.
[92]'Incubator' refers to an informal study group/working group established outside the military hierarchy. See Benjamin Jensen, 'Escaping the Iron Cage: The Institutional Foundations of FM 3–24 Counterinsurgency Doctrine', *Journal of Strategic Studies* 39/2 (2016), 214.
[93]Dyson, *Organisational Learning*, 151.

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Data availability statement

The data collected for this study contains sensitive military information, including personal or confidential details that could potentially identify participants and pose risks to their privacy, well-being, or security. Due to these considerations, access to the research data is restricted and cannot be made publicly available.

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