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Think Again: Supplying War

Reappraising Military Logistics and its Centrality to Strategy and War

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Academic debate in security and strategic studies over the past two decades has focused overwhelmingly on understanding changes to the security environment and their impact on the strategy and conduct of contemporary wars. Nowhere is this more obvious than with the wars fought by Western armies following the attacks of 11 September 2001 (9/11). Discussions between academics covered even the most detailed (grand) strategic, operational, and tactical aspects of contemporary war, from the very general to the very specific levels; all but one.

The supply of military operations since the end of the Cold War is virtually absent from these debates, despite the central relevance of military logistics for every aspect of military operations, including and particularly for strategy.[1] In effect, the academic literature routinely ignores a pivotal component of war which, on the one hand, is the arbiter of strategic opportunity,[2] and which, on the other hand, is heavily determined by strategic and operational planning. The only area of the supply of war that receives substantial attention is the development of weapon systems and technology in the context of the defence industrial base.[3] Yet even here, the focus is on the Revolution in Military Affairs (RMA) and the modernisation and globalisation of the defence industry,

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[1] See Martin van Creveld, *Supplying War: Logistics from Wallenstein to Patton* (Cambridge: Cambridge University Press, 1986) for a seminal historical survey of the importance of logistics in major wars. See also Julian Thompson, *The Lifeblood of War: Logistics in Armed Conflict* (London: Brassey's, 1991).

See Thomas M. Kane, *Military Logistics and Strategic Performance* (London: Frank Cass, 2001) for the linkage between military logistics and strategic performance.

[2] Kane, *Military Logistics*, 10.

[3] See Jacques S. Gansler, *Democracy's Arsenal: Creating a Twenty-First-Century Defense Industry* (London: MIT Press, 2011), Eugene Gholz, 'Globalization, Systems Integration, and the Future of Great Power War,' *Security Studies* 16, no. 4 (October-December 2007): 615-636, Eugene Gholz and Harvey M. Sapolsky, 'Restructuring the US Defense Industry,' *International Security* 24, no. 3 (Winter 1999/2000): 5-51, and Stephen G. Brook, *Producing Security: Multinational Corporations, Globalization, and the Changing Calculus of Conflict* (Princeton, NJ: Princeton University Press, 2005).

while the Revolution in Military Logistics (RML) – a prerequisite for the RMA –[4] has been mostly disregarded. The same applies to the question of who does military logistics today and how. Little thought has been given to the increasing complexity and diversification of the military supply chain and logistics systems, or the service industry which now provides most non-combat services to numerous armies.[5]

This article takes on the near-absence of logistics in post-Cold War security and strategic studies. It departs from the understanding that logistics constrains strategic opportunity while itself being heavily circumscribed by strategic and operational planning, emphasising the deep reciprocity of their relationship. We contend that academic debate must pay attention to both, the more abstract strategic level of war *as well as* the sources and supply of its implementation. Otherwise, it will remain incomplete and unable to fully comprehend the conduct and outcome of war, as well as military effectiveness. To make this case, the paper builds on two observations of the evolution of military logistics, the international security environment, and war since the end of the Cold War.

First, military logistics – broadly defined – has evolved significantly over the past decades. In particular, the revolutions in military affairs and logistics, the increased outsourcing of logistics functions, and the accelerated transfer of assets and knowledge out of the military and into the private sector, have resulted not only in technological advances, but also in less visible and controllable layers and actors in the supply chains through which strategies are supported and realised.

Secondly, while this alone should warrant a reappraisal of logistics' relationship with strategy, various developments at the strategic level likewise affect the contemporary character of the logistics-strategy nexus, further bolstering our case. These are the change in military orientation away from (mostly *known*) conventional threats and adversaries during the Cold War towards risks and (often *unknown*) adversaries today. This becomes especially evident in the complex operational environments which Western armies have been most deeply involved in since the end of the Cold War. The potential for mistakes or shortages snowballing into substantial problems is considerable. For instance, a strategic miscalculation may lead to insufficient support provisions making strategic objectives unattainable, or a complex logistical system may inadvertently directly affect the ill-defined battle space.

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[4] Dennis J. Reimer, 'The Revolution in Military Logistics', *Army Logistician* 31, no. 1 (1999): 2.
[5] Instead, the academic debate on privatization focuses almost exclusively on security companies.

While the literature addresses both developments in isolation of one another, what has remained wanting is a reappraisal of the logistics-strategy nexus and how the developments outlined above influence its current shape. It is this reappraisal which this paper will undertake. On a general level, it will establish the reciprocal links between logistics and logistical constraints on the one hand and strategic planning and performance on the other. On a more specific level, it will trace the key developments in both domains since the end of the Cold War, examine how they influence the logistics-strategy nexus, and argue that the conduct, outcome, and effectiveness of military operations is only fully understood if it takes both sides into account.

The paper proceeds in three steps. It first sets out the big logistics-strategy picture by explaining the timeless logistics-strategy nexus. Next, it discusses the contemporary evolution of military logistics, international security, and strategy, and deduces how this has generally influenced the contemporary character of the nexus. The final section conducts an empirical case to illustrate the more general arguments made so far. It lays out the complexities of planning, supplying, and implementing contemporary stabilisation and counterinsurgency operations (COIN), drawing primarily on evidence from recent operations conducted by the United Kingdom (UK).

The Timeless Logistics-Strategy Nexus

To set the terms of the argument, it is necessary to first explain what is meant by the term military logistics. The NATO Logistics Handbook defines military logistics broadly as 'the science of planning and carrying out the movement and maintenance of [air, sea, and land] forces'[6]. Jomini's more detailed definition points out that logistics involve the carrying out of strategic and tactical actions, thereby consisting of 'the means and arrangements which work out the plans of strategy and tactics.[7] Strategy decides where to act; logistics bring the troops to this point; grand tactics decides the manner of

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[6] NATO, *NATO Logistics Handbook*, 3rd edition (Brussels, 1997), 1.

[7] During Jomini's time the operational level was unknown to the military. The operational level existed in theory and practice but was only formally introduced in 1982 in the U.S. Army, *Operations: FM 100-5* (Washington, D.C.: Headquarters, Department of the Army), available at http://www.cgsc.edu/CARL/docrepository/FM100_5_1982.pdf, accessed November 3, 2013. Today, we could add the operational level to Jomini's definition of military logistics.

execution and the employment of the troops'.[8] The crucial relationship between strategy and logistics is highlighted by Martin van Creveld in his seminal work *Supplying War*. He not only gives equal importance to logistics and strategy, thereby moving logistics to centre stage, but also reminds his reader that strategy has rested on logistics throughout modern history:

> Strategy, like politics, is said to be the art of the possible; but surely what is possible is determined not merely by numerical strengths, doctrine, intelligence, arms and tactics, but, in the first place, by the hardest facts of all: those concerning requirements, supplies available and expected, organization and administration, transportation and arteries of communication. Before a commander can even start thinking of [...] the whole rigmarole of strategy, he has – or ought – to make sure of his ability to supply his soldiers.[9]

Put differently, military logistics decides 'what military force can be delivered to an operational theatre, the time it will take to deliver that force, the scale of forces that can be supported once there, and the tempo of operations'[10] as well as its correspondence with political goals.[11] Logistics thus determines the variety of strategic options available, but not which strategic course of action will be followed or how effectively it will be implemented. It is this perspective that military logistics is central to a commander's ability to implement his or her campaign plans that underlies the oft-cited and somewhat provocative adage attributed to U.S. General Omar Bradley that 'amateurs study strategy and tactics. Professionals study logistics.'[12]

It is imperative to note that this relationship also works in the opposite direction. Decision-makers are tasked with resolving a set of choices that turn strategy into a workable logistical system. The logistical systems in place therefore result from national security policy and thus the type and range of contingencies that the state chooses to prepare for. This is so because they affect the support requirements needed to conduct such operations at the desired tempo. It is here that the defence industry and civilian

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[8] Baron Antoine-Henri Jomini, *The Art of War: Précis de l' Art de Guerre*, with a new Introduction by Charles Messenger (London: Greenhill Books, 1971; originally published in 1838), 69.
[9] Van Creveld, *Supplying War*, 1.
[10] Matthew Uttley and Christopher Kinsey, 'The Role of Logistics in War,' in *The Oxford handbook of War*, eds. Julian Lindley-French and Yves Boyer (Oxford: Oxford University Press, 2012), 401.
[11] Ibid., 402.
[12] James F. Dunnigan, *How to Make War* (London: Harper Collins, 2003), 499.

supply chain, which are drawn upon to meet potential future requirements, are most clearly implicated, with logistics being 'the hinge between industry and war'.[13]

Taken together, grand strategic plans influence the general shape of the military logistic system, while future strategic options are circumscribed by the logistical system of the day. As the term 'contingency' makes clear, this process is strongly characterised by incomplete information and uncertainty, turning ongoing appraisals of the geo-strategic environment into a series of 'what if' scenarios. Within the confines of a specific war, once operations begin the entire interface – i.e. the flow of information and supplies from policy-makers via operational planners to battlefield commanders and back up the line of responsibility – takes on prime relevance as it seeks to constantly keep strategy, operations, tactics, and their supply in sync.[14] Overall, therefore, five factors interact and directly affect the relationship between military logistics and strategy – policy, resources, information, geography, and the adversary – in which logistics determines the feasibility and sustainability of a given defence political strategy, while strategy circumscribes the shape of the logistics system.

The Logistics-Strategy Nexus in an Evolving Military and Strategic Context

The logistics-strategy nexus thus has both an enduring nature, discussed in the preceding section, as well as a changing character, whose contemporary iteration we turn to next. The current context of military change and strategic uncertainty implicates all five factors that were shown to circumscribe the logistics-strategy nexus.

Military Modernisation and Strategic Uncertainty

Over the course of several decades, the defence enterprises of many Western states not only modernised their weapon systems – as is well documented in the literature – but also gradually remodelled themselves along ideas and practices borrowed from the private sector with significant ramifications for military force structure. Beginning in the

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[13] Heinz Schulte, 'Industry and War,' in *The Oxford Handbook of War*, eds Julian Lindley-French and Yves Boyer (Oxford: Oxford University Press, 2012), 517–530, at 517.
[14] Regarding information see William G. T. Tuttle, *Defense Logistics for the 21st Century* (Annapolis, MD: Naval Institute, 2005), 6.

1960s, market-thought and managerialism were progressively introduced into the defence enterprises.[15] The objective of these reforms was improving efficiency and effectiveness, in particular given a constant tension between the scope of foreign and defence political commitments and the available resources. By the 1990s, government executives had institutionalised 'best business practices' to such an extent as to engender a 'corporate culture' that asks of public servants in the UK Ministry of Defence (MoD) and the U.S. Department of Defense (DoD) to act like business managers and that favours the acquisition not only of equipment but also of services from private companies.[16] Both states also ended conscription in the 1960s and 1970s and significantly reduced their standing armies in the early 1990s as the result of the Peace Dividend. In the process, many logistics responsibilities were moved first to the reserves and eventually to private contractors.[17] In essence, they bought into the concept of 'core competency', redefining the military from one able to be relatively self-sufficient to one that focuses on combat.[18] For many years, the number of DoD contractors in Iraq and Afghanistan exceeded the number of deployed troops, underscoring the dependency on the private sector for both labour and supplies that are shown below to directly influence the conduct of war and an army's strategic performance.[19]

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[15] See *American Military History: the United States Army in a Global Era, 1917-2003*, general ed. Richard Stewart, Vol. II (Washington, D.C.: Center of Military History, United States Army, 2005), 273-274, and Martin Edmonds, 'Planning Britain's Defence, 1945–85: Capability, Credibility and the Problem of Time,' in *The Defence Equation: British Military Systems: Policy, Planning and Performance*, ed. Martin Edmonds (London et al.: Brassey's Defence Publishers, 1986), 1–18, at 9.

[16] Regarding the UK see Matthew Uttley, *Contractors on Deployed Military Operations: United Kingdom Policy and Doctrine* (Carlisle, PA: Strategic Studies Institute, U.S. Army War College, 2005), 29-30. Regarding the USA it should suffice here to point to the Defense Science and Defense Business Boards to underscore DoD's pro-active consultation of industry views and experiences for itself.

For a detailed examination of this process see Mark Erbel, *Contractors and Defence Policy-Making: Examining the Drivers, Process, and Future of Military Outsourcing*, PhD Dissertation (War Studies), King's College London, 2015, 95-129.

[17] See *American Military History*, 370-388; Stuart Croft, Andrew Dorman, Wyn Rees, and Matthew Uttley, *Britain and Defence 1945-2000: a Policy Re-Evaluation* (Harlow: Longman, 2001), 93-98; and Malcolm McIntosh, *Managing Britain's Defence* (Basingstoke: Macmillan, 1990), 137-139.

[18] On the core competency military see Christopher Kinsey, *The Transformation of War: the Rise of Private Contractors*, The Emirates Occasional Papers 72 (Abu Dhabi: The Emirates Center for Strategic Studies and Research, 2009).

The key policy documents were U.S. Department of Defense, Commission on Roles and Missions of the Armed Forces, *Report of the Commission on Roles and Missions of the Armed Forces* (Arlington, VA: U.S. Department of Defense, 1995) in the USA, and UK Ministry of Defence, *Frontline First: the Defence Costs Study* (London: HM Stationery Office, 1994).

[19] Moshe Schwartz and Joyprada Swain, 'Department of Defense Contractors in Afghanistan and Iraq. Background and Analysis' (Congressional Research Service, No. R40764, March 2011), 7, 10, 13, 15, 24.

The RML epitomises this process. The adoption of business practices accelerated in the 1990s following the end of the Cold War.[20] The RML focused on restructuring the military supply chain so as to resemble that of the private sector, moving from a supply-based to a distribution-based system.[21] This involved reducing large stockpiles – which had been hallmarks of supply-based logistics – and focusing on developing faster distribution mechanisms and processes. The capabilities required for this transformation did not exist in the military at the time but resided in civilian markets and companies,[22] leading both countries' defence enterprises to embark on various business transformation initiatives and acquisition reforms.[23]

The most recent RMA, similarly sought to harness technologies and products that existed only in the private sector. In fact, the RML is a requirement for the RMA's success, as the vastly more complex and sophisticated weapon systems demanded significantly more and enhanced support and maintenance service capabilities.[24] The number of private sector personnel needed to install products, train the military in their use, and maintain them thus rapidly grew for the new systems, processes, and platforms introduced in the context of the RML and RMA. Crucially, as intellectual property rights and technical data usually remain with the manufacturer,[25] the military is not allowed (or possibly even able) to change or adapt the equipment without the permission (and often the assistance) of the manufacturer, even when the equipment is operational. The military therefore now increasingly taps into existing civilian technologies, products, supply chains, transport capacities, and workforces and relies on support service contractors not only in home bases but also in active theatres of war. What is more, the

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[20] Cf. P.W. Singer, *Corporate Warriors: the Rise of the Privatized Military Industry*, upd edn (Ithaca, NY; London: Cornell University Press, 2008), 66-67, and Deborah D. Avant, *The Market for Force: the Consequences of Privatizing Security* (Cambridge: Cambridge University Press, 2005), 34-38.

[21] See U.S. Department of Defense, Defense Business Board, *Supply Chain / Performance-Based Logistics Task Group: Report to the Senior Executive Council, Department of Defense, Report FY03-4* (Washington, D.C., 2003). In a nutshell, supply-based systems work off of existing stockpiles while distribution-based systems focus on the process of rapidly supplying a customer with minimal turnaround times at the stages an item passes through.

[22] See U.S. Department of the Army, *Army Science and Technology Master Plan* (Washington, D.C.: Department of the Army, 1998), accessed March 9, 2012, http://www.fas.org/man/dod-101/army/docs/astmp98/index.html, Annex G, Section B.

[23] See e.g. UK Ministry of Defence, Defence Equipment & Support, *DE&S Business Plan 2010-2013* (Abbey Wood: UK Ministry of Defence, n.d.), 2, UK Ministry of Defence, *Policy Paper No. 4: Defence Acquisition* (London: UK Ministry of Defence, 2001), and Kevin Carroll and Colonel David W. Coker, 'Logistics Modernization Program: a Cornerstone of Army Transformation,' in *Army Logistician* 39, no. 1 (January-February 2007), 11–15.

[24] Reimer, 'Revolution in Military Logistics'.

[25] Interview with Dr Frank Camm, Senior Economist, RAND Corporation, April 2012.

portfolio of systems and platforms 'owned' (and sometimes operated) by the military in the traditional sense has steeply declined as in-house knowledge and responsibilities were transferred out of the military into the private sector. The former Director for Logistics (J4) at the US Joint Chiefs of Staff, LTG (ret) C.V. Christianson, a thought leader in the field concludes accordingly that today 'industry is an important player – maybe the most critical element of all – to defence supply chain success; for it is within industry that we ultimately find the 'source' of our logistics support.'[26] Contractor-centred and often decades-long product support arrangements, such as performance-based logistics, contractor logistics support, and 'through-life capability management', have become the preferred or even standard choices in the US and UK defence acquisition systems.[27]

The strategic environment, meanwhile, evolved at the same time that military logistics was transformed. During the Cold War, the threat perceived by the West was well known. Soviet intentions and their ability to turn them into capability guided Western defence policy.[28] Following the end of the Cold War and its geopolitical shifts, Western states incrementally adopted a more interventionist posture. Often ill-defined limited risks are perceived on a global scale. On an international strategic level, addressing risks now takes on a pre-emptive and possibly even preventive form as inaction is often regarded as riskier than going to war. Concepts such as 'preventive defence' proliferated as the West turned its attention away from adversarial strong states to risks emanating from so-called 'failed', 'failing', or 'fragile' states.[29] The resulting type of military operations thus rely not only on global power projection capabilities at short notice, but also often take the shape of 'wars among the people' that rely heavily on support rather than combat capabilities.[30] Moreover, such contemporary wars, unlike existential wars in

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[26] C.V. Christianson, 'Global Dispersion, Global Sustainment: a Mandate for a Global Logistics Organization?' *Joint Force Quarterly*, no. 65 (April 2012), 44–47, at 45.

[27] See U.S. Congress, *National Defense Authorization Act for Fiscal Year 2013*, H.R. 4310, 2013, Section 823, and UK MoD, *DE&S Business Plan 2010-2013*, 2. In through-life models the manufacturer is responsible not only for delivering a capability (e.g. an unmanned aerial vehicle) but also for maintaining, repairing, upgrading, and sometimes operating it – the military purchases an asset's capability rather than the asset itself.

[28] Robert Johnson, *Improbable Dangers* (New York, NY: St Martin's Press, 1994), 2.

[29] Christopher Coker, *Globalisation and Insecurity in the Twenty-First Century: NATO and the Management of Risk, Adelphi Paper*, Vol. 345 (Oxford: Oxford University Press, 2002), 54, 59-64. The government publication most clearly epitomising this shift was U.S. White House, *The National Security Strategy of the United States of America* (Washington, D.C.: White House, 2002).

[30] Gary H. Mears and Ted Kim, 'Logistics: the Way Ahead,' *Joint Force Quarterly*, no. 4 (May 1994): 38-44, at 40, 42.

the past, are generally fought not by alliances but coalitions, with potential implications for their supply as discussed below.

The Impact of Military Modernisation and Strategic Uncertainty on the Contemporary Character of the Logistics-Strategy Nexus

The developments in the defence enterprise outlined above complicate the interplay between logistics and strategy. First, the move to distribution-based logistics reduced not only turnaround times but also the stocks available at a decreasing number of government-owned storage facilities, increased the types of actors involved in supplying war, and introduced additional, less visible or controllable layers into the supply chain. Military planners must now plan around an increasingly private supply chain and consult with suppliers at the very early planning stages of even low-scale operations to ensure the availability and sustainability of systems, spares, and munitions. On the one hand, this potentially increases operational security concerns to extend beyond government officials who are excluded on a need-to-know basis to encompass support service contractors who provide the bulk of military support to the armed forces on overseas deployments. This situation stands in sharp contrast to what Thomas Kane found, namely that '[to] provide the resources which strategy requires, logisticians must participate in the making of strategy, not only in the planning phase of a campaign, but every step of the way'.[31] Given the breadth and pervasiveness of contractorisation, this statement may need to be amended to also include support service contractors. Senior logisticians will however tell you that they do not have the logistical input that operational theory would require them to have[32] in today's environment, which requires constant reinterpretation, while politicians themselves also tend to disregard logistics.[33] A potential result is the delay or shortfall of the provision of mission-critical services and equipment.

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[31] Kane, *Military Logistics and Strategic Performance*, 5.

[32] In a personal interview with the author in February 2012, retired Major General Jeff Mason, former Assistant Chief of Defence Staff for Logistics (ACDS (Log Ops)), for instance recounted how he repeatedly invited himself to meetings to ensure that the logistics aspects are taken into account on the strategic level.

[33] See e.g. Matt Cavanagh, 'Ministerial Decision-Making in the Run-Up to the Helmand Deployment,' *The RUSI Journal* 157, no. 2 (April-May 2012): 48-54, at 51-52.

On the other hand, the shift to a core competency military, the complexity of technological systems, the knowledge transfer out of the military, and the subsequent far-reaching contractorisation of large parts of the logistics tail means that numerous integral actors are located on virtually all layers of the supply chain. This increases the complexity of the system and reduces its palpability as a whole. The flow of information between those involved in planning and executing military strategies is affected by the loss of clarity regarding the channels of communication, the development of parallel chains of command, and the blurring of existing ones.[34] Also, the end-users – forward soldiers and officers – sit at the end of a potentially long, lowly-stocked, and volatile supply chain.[35] The military has thus not only lost its *sense* of ownership over its supply chains; its suppliers and service providers face risks which are outside the control and often hidden from view of the military end-user.[36]

Secondly, the strategic shifts above also immediately relate to military logistics and logistics transformation by affecting the parameters of required logistics capabilities. A global posture aimed at uncertainties and the rapid onset of military operations in any corner of the globe stands and falls with responsiveness. Logistically, the future supply of armed forces will operate on awareness, networks, mobility, and sustainability of global scope, and through a logistic enterprise that moves 'from mass toward responsiveness'[37] – essentially the objective of the RML. Strategically, responsiveness denotes the ability of the armed forces to establish and credibly project force when, where, and how it may be required by the military commander. Former U.S. Army Chief of Staff, General Eric Shinseki, asserted that after the Cold War the need is no longer for

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[34] On additional chains of command, see Lexington Institute, *Contractors on the Battlefield: a Support Force to Manage* (Arlington, VA: Lexington Institute, 2007), 10.

For the more specific impact of the introduction of contractors into the Total Force on civil-military relations see Thomas C. Bruneau, *Patriots for Profit: Contractors and the Military in U.S. National Security* (Stanford, CA: Stanford University Press, 2011), and Meghan O'Keefe, 'Civil-Private Military Relations: The Impacts of Military Outsourcing on State Capacity and the Control of Force,' *Paper presented at the annual meeting of the International Studies Association*, Le Centre Sheraton Montreal Hotel, Montréal, Québec, 16 March 2011, available at http://www.allacademic.com/meta/p500011_index.html.

[35] Col. Sharon L. Leary, *Sustaining the Long War*, Strategy Research Project (Carlisle Barracks, PA: U.S. Army War College, 2007), 8.

[36] For a concise discussion of the outsourcing of military logistics, see Mark Erbel and Christopher Kinsey, 'Privatizing Military Logistics,' in *Routledge Handbook of Private Security Studies*, eds. Rita Abrahamsen and Anna Leander (Abingdon: Routledge, forthcoming in 2015).

[37] Lt Gen. (ret) C.V. Christianson, 'National Security and Global Logistics: Adapting to the Uncertainties of Tomorrow,' *Army Sustainment* 44, no. 6 (November-December 2012): 4-7, at 6-7. See also Leary, 1.

forward-stationed heavy divisions that are powerful but difficult to deploy, but for quickly deployable, lethal, and survivable forces across the spectrum. Within his transformation strategy, sustainability was regarded as the key enabler for the Army, and strategic responsiveness itself was tightly wound up in the aforementioned RML.[38] In other words, the very basis of the military's ability to realise its post-Cold War grand strategy and posture is logistics. What is more, the supply and support of such a global presence brings with it a very long logistical 'tail' which is credited with dramatically increasing the tail-to-tooth ratio, i.e. the number of soldiers engaged in support rather than combat functions.[39] Therefore, not only is logistics the basis of implementing strategy, but the demands placed on the logistics systems have heightened further since the end of the Cold War, are increasingly implemented by private contractors operating outside the regular military force structure and chain of command, and face the technical challenges discussed above. Moreover, given that wars today are generally fought by coalitions of the willing, there emerges the risk that supply systems of coalition partners are much less integrated than those of long-time allies. Since these wars often take the shape of 'wars among the people', the logistic system for a given operation will have to operate in ill-defined battlespaces, further complicating the supply of force in the absence of clearly identifiable safe areas, lines of communications, and front lines, as we explore in the next section.

In summary, both military logistics and defence strategy underwent significant developments in the post-Cold War era. Viewed in isolation they are evolutionary and fairly straightforward to grasp; their combination, meanwhile, significantly affects the contemporary character of the logistics-strategy nexus and the contemporary reciprocal relationship between the two. Following the more general and conceptual discussion about the nexus and its contemporary shape above, this paper now offers more detailed empirical evidence to illustrate the conceptual argument and provide deeper support for our claims regarding contemporary strategy, uncertainty, military logistics, and supplying contemporary war.

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[38] Col. David B. Gaffney, *Army Logistics Transformation: a Key Component of Military Strategic Responsiveness*, Strategy Research Project (Carlisle Barracks, PA: U.S. Army War College, 2008), at 7, 9, and 12.

[39] Daniel R. Lake, 'Technology, Qualitative Superiority, and the Overstretched American Military,' *Strategic Studies Quarterly* 77 (Winter 2012): 71-99, at 83.

The Contemporary Logistics-Strategy Nexus in Action: Counterinsurgency and Stability Operations in Iraq and Afghanistan

The general observations and contentions discussed above become particularly visible and acute in asymmetric conflicts such as counterinsurgency (COIN) operations in post-invasion Iraq and Afghanistan. However, given that the issues observed and discussed below are at least latently present in most armed conflicts, the following case studies are relevant to a better understanding not only of past operations but also future conflicts. It is therefore all the more telling that the sizeable body of literature on warfare in general and COIN in particular that emerged in the past decade all but bypasses logistics. The remainder of this article addresses this oversight by explicating the reciprocally shaping and constraining dynamics and relationship between military logistics on the one hand, and strategic opportunity and performance on the other with reference to UK operations in Iraq and Afghanistan. It sets out both the wider strategic as well as operational pictures, and analyses how the latter constrained commanders when the two pictures did not align. It then closes by synthesising its findings and tying them back into the conceptual discussion above, in particular by highlighting the reciprocal and sequential relationship and influence between the five factors that affect the logistics-strategy nexus and indeed military operations in any given context: policy, resources, information, geography, and the adversary.

How Strategies Shaped Logistics Footprints

Not dissimilar to the expectations of their US allies, perhaps the defining characteristic of the UK's part in the invasion of Iraq and the subsequent occupation of the south of the country in 2003 was the assumption that victory would be achieved swiftly,[40] that British troops would be welcomed, and that the entire operation would soon be over. The scope of the expected battles was small, and the aversion to casualties was high among the political leadership, which created a situation in which the political visibility

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[40] Christopher L. Elliott, *High Command: British Military Leadership in the Iraq and Afghanistan Wars* (London: Hurst & Company), 104. Elliott is a retired Major General of the British Army who served among others as Director of Military Operations.

For another critical perspective on the Iraq and Afghanistan deployments, see Frank Ledwidge, *Losing Small Wars: British Military Failure in Iraq and Afghanistan* (New Haven, CT; London: Yale University Press, 2011). Ledwidge is a retired Lieutenant Commander of the Royal Navy, a barrister, and worked among others in Afghanistan during the time studied here.

of tactical issues and thus the desire to drive military strategy were high among political decision-makers.[41] Intelligence preparations thus did not reach far beyond the initial battle – assumed to be small and swift – with the assumption being to remain in place until it was possible to withdraw.[42]

The UK deployment to Helmand in 2006, meanwhile, was similarly designed to be a safe, manageable, and relatively static operation across the province.[43] According to retired Colonel David Wiggins, who was on the planning staff for the British deployment to Helmand as operational planner for the Defence Logistics Organisation, 'the planning assumption brief was that much of the force would be tied to static locations, and that the only manoeuvre element would consist of a combined force of about 250 men which would be used on two or three operations a month'.[44] As the first tactical commander on the ground, Brigadier General Ed Butler testified to the parliamentary defence committee, the UK troops were designed to be able to mount 'one deliberate operation and three or four reactive ones a month.'[45] There was thus an overall tendency, in the words of the former ISAF commander Lord Richards, not to abide by the Army's credo to 'hope for the best but plan for the worst.' Instead, the army was 'actually hoping for the best and planning for the best.' He also observed an 'institutional reluctance' to acknowledge the possibility of the conflict getting worse.[46] Former Chief of the General Staff General Sir Peter Wall is accordingly quoted acknowledging that the assumption that the Army would be reducing to about 1,000 troops in Iraq by late 2005, i.e. the time when the Helmand deployment was to begin, was no longer realistic.[47] However, there were no consequences for the decision to take on two full-scale operations.[48] Finally, therefore, and very probably because of the heavy

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41 Personal interview of the authors with David Shouesmith, March 2015.
42 Ibid.
43 For an overview over the deployment to Helmand see Michael Clarke, ed., *The Afghan Papers: Committing Britain to War in Helmand, 2005-06* (Abingdon: Routledge, 2011).
44 Personal interview of the authors with Col. (ret) David Wiggins, July 2013.
45 UK House of Commons Defence Committee, *Operations in Afghanistan*, Fourth Report of Session 2010-12, HC 554 (London: The Stationery Office, 2011), 23 (para 38).
46 'UK military "made wrong calculations" on Afghanistan,' *BBC News*, 23 October 2014, available at http://www.bbc.co.uk/news/uk-29714738, accessed 19 May 2015. See also Elliott, *High Command*, 113.
47 'UK military "made wrong calculations"', *BBC News*.
48 Elliott, *High Command*, 112, and 'UK military "made wrong calculation"', *BBC News*.

commitment in two theatres of operations, the amount of resources – manpower, equipment, and support – circumscribed the limits of what was possible to deploy.[49]

This combination of factors left strong imprints on the initial deployments, force structures, and military footprints, as well as the military's ability to react to changing dynamics on the ground. In Basra, the UK military assumed a defensive posture with a soft tactical footprint and spread out across several bases as it had done in the past in the Balkans and Northern Ireland.[50] Encouraged by low levels of violence – especially in comparison to the US-controlled areas – and intending to hand over security responsibility quickly to Iraqi forces, it was expected 'that Basra could be held by a single battalion using soft-skinned vehicles and wearing berets', and troop levels were quickly reduced from an initial 42,000 to 9,000.[51]

In Helmand, meanwhile, UK forces deployed in 2006 with large ambitions for pacifying and positively impacting the province through reconstruction and security. Initially, 3,000 UK troops were to be based in four locations – Kandahar Air Base, Camp Bastion (northwest of Lashkar Gah), Lashkar Gah, and Forward Operating Base (FOB) Price (in Nahri Saraj District). The supply of these bases was to be done via short land-based lines of communication.[52] Similarly, troops were intended to manoeuvre in vehicles and the limited numbers of anticipated engagements were expected to be force-on-force rather than road-side bombs. The number of Chinook helicopters was based on these plans.[53] Logistic resupply sorties between the four bases or sorties in support of offensive operations by the battlegroup may however not have featured sufficiently in these plans; rather, the number of deployed support helicopters was the number available.[54] The logistic footprint may thus have been based not only on strategic assessments and needs,

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[49] The supply of British forces, especially with helicopters in Helmand, was headline news for years after 2006, as well as the subject of numerous parliamentary debates. See for instance in UK House of Lords Hansard, 6 March 2006, Columns 521-523, UK House of Lords Hansard, 21 June 2006, Columns 752-754, and UK House of Commons Hansard, 21 June 2006, Columns 433WH-439WH.

[50] David Shouesmith, March 2015.

[51] Elliott, *High Command*, 108.

[52] David Shouesmith, March 2015.

[53] Jeff Mason, July 2013.

[54] Written correspondence of the authors with Captain Andy Curtis, March 2015. Curtis served as Chief of Staff of the UK National Support Command (later renamed Joint Force Support HQ), which was responsible for commanding the in-theatre end of the UK's initial deployment into Helmand Province from January to July 2006.

but also simply on the manpower and kit that remained available after combat assets had been nominated.[55]

Thus originated the UK military footprints in Iraq and Afghanistan in the early phases of the deployments. The operations on the ground, however, did not align very neatly with those that had been planned for, forcing civilian and military decision-makers to respond by adapting their strategies and the capability mix of troops and equipment. In doing so, they were severely constrained by the original logistic and manpower package already in place, which impacted on the further course of operations as we discuss next.

How Logistics Footprints Constrained Operational Choices and Opportunities

As is very well documented, Iraq's south did not remain peaceful for long. In Basra and the surrounding rural areas, major fire fights broke out on most patrols, while bases were increasingly coming under attack and siege by militias. The recently scaled-back UK contingent, facing corrupt local police and being supported by only few newly trained Iraqi soldiers (most were deployed north where the violence was even worse), was caught off guard by the sudden eruption of violence which took on the form of a full-scale insurgency.[56] As a result, as many patrols as possible changed from soft-skinned vehicles and wearing berets to the available armoured vehicles and personal protective equipment (PPE) to protect against road-side bombs and rocket fire. Without reinforcements being sent to Basra, the deployment however quickly ran into trouble on two related fronts: the ability and political will to continue patrols, as well as the ability to supply and operate from the several established bases in and around Basra.[57] The lack of sufficient protective kit and protective mobility against the unexpected threat of improvised explosive devices (IEDs), coupled with risk aversion meant that patrols could not be undertaken safely and were thus reduced to a minimum. Moreover, without patrols the military were not able to take the initiative as much as it would have had to in order to turn the tide on the militias. At the same time, the spread out bases in and around Basra had to be supplied by logistics patrols, but with the unsustainable footprint – leading to improvisation such as locally producing some form of armour

[55] Andy Curtis, March 2015.
[56] Elliott, *High Command*, 110-111.
[57] David Shouesmith, March 2015, and Elliott, *High Command*, 111.

plates for soft-skinned vehicles for at least some protection – the supply runs could not be kept up.[58] Politically remaining intent on withdrawing from Iraq and handing over to local forces, the UK amended the operational design to match the realities on the ground not by surging troop numbers and consolidating gains made against the militias but by withdrawing – over the course of about a year – from the outer bases and concentrating on the base at Basra airfield. Mobility, and the ability to conduct deliberate operations and take the initiative were heavily reduced.[59] Basra fell from the UK military to the Jaish al-Mahdi and was only brought back under Iraqi government control after a major US/Iraqi operation was launched in 2008.[60]

The situation in Helmand, especially in its early stages, shares a number of similarities with that in Basra. Light military forces were deployed across four bases using an 'inkspot strategy' to clear and hold territory and expand from there, while sustainment was to be assured via road. Soon after arriving in 2006, the Taliban launched a wave of attacks against British and the local Helmand governorate's positions. Fearing a collapse of the local government, Brigadier Ed Butler, the first tactical commander on the ground in Helmand, directed small groups of his combat troops to deploy across the province and secure main government buildings in Sangin, Nawzad, Musa Qaleh, and Kajaki.[61] The concomitant expansion of bases by four – FOB Robinson, platoon houses in Musa Qaleh, Sangin, and Garmsir – which resulted from abandoning the initial 'inkspot strategy', did not fully account for the logistic implications of stretching the forces thin across a wide geographical area,[62] possibly because of the time-sensitive nature of the expansion. Logistically, the spread across Helmand meant considerably more and longer supply lines whose operation required significant resources and which were moreover vulnerable to attack on land; they therefore became increasingly dependent on the low number of deployed helicopters. By stretching resources thin, the force's capacity to take the initiative and conduct deliberate operations shrank.[63] Some operations had to be delayed or required help from the US military to be conducted. In one instance, the only two available Chinook helicopters had to be used for an emergency resupply mission to FOB Robinson which was running low on food and

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[58] David Shouesmith, March 2015.
[59] Elliott, *High Command*, 114-117, and David Shouesmith, March 2015.
[60] Elliott, *High Command*, 120-121.
[61] Ibid, 134.
[62] Andy Curtis, March 2015.
[63] Ibid.

water, meaning that a 3 PARA company could not deploy on a major operation with the US's 10th Mountain Division in Northern Helmand as planned, leading to a delay of the entire operation by a day.[64] Overall, the resources expended on supplying the larger web of bases reduced the ability to adapt to changing dynamics on the ground. This was only resolved when the deployed UK force tripled to just under 10,000 uniformed soldiers and officers who were supported by a further approximately 9,000 contractors and supplied with additional protective kit and mobility (vehicles and helicopters).[65]

Brigadier Butler, who was aware before the deployment had even begun 'that there were significant shortfalls in core equipment areas' and enabling capabilities,[66] had been wary of spreading his small force thin across the province, and his fears were vindicated when 'large forces, comprising hundreds of insurgents [were able] to surround and potentially isolate these British outposts'[67] and take them under heavy, sustained attack. UK forces – under-resourced with Weapons Mount Installation Kit Land Rovers (WMIKs) for combat support and combat service support, and struggling with equipment that had been procured for Iraq but that did not work in the Afghan dust and on non-asphalted roads –[68] had to withdraw from Musa Qaleh, which became 'a haven for insurgents' until no less than 4,000 British, Afghan, and US troops assaulted the town in December 2007.[69] The need for this particular operation came directly from a mismatch between the strategy of expanding across the province and its sustainability with the support package in place. Moreover, the operation also diverted attention and resources away from two overarching strategic objectives in Helmand – development and reconstruction.

Thus, while in isolation each of the logistic factors analysed here may be of secondary importance, it is their combined effect on the ability to conduct operations to the best possible strategic and operational effect, as happened in Musa Qaleh, which makes its centrality to strategy clear. The move towards COIN in Helmand, but also the fighting of militias in Basra, encountered the usual problems associated with COIN. It requires a

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64 Ibid.
65 David Shouesmith, March 2015, and Elliott, *High Command*, 136.
66 Ed Butler, 'Setting ourselves up for a Fall in Afghanistan,' *The RUSI Journal* 160:1 (2015): 46-57, at 51.
67 Daniel Marston, 'British Operations in Helmand Afghanistan,' *Small Wars Journal*, 13 September 2008, available at http://smallwarsjournal.com/jrnl/art/british-operations-in-helmand-afghanistan, accessed 2 October 2013, 2.
68 Andy Curtis, March 2015, and David Shouesmith, March 2015.
69 Marston, 'British Operations in Helmand,' 2.

large pool of manpower, faces challenges associated with high training needs of both own and host nation troops, and requires the generating of capability across a wide area with partly underdeveloped infrastructure, all of which reduce readiness elsewhere.[70] As a result of the various shortages, the initiative was lost to insurgent forces, and thus the flexibility to amend strategy in response to events on the ground.

Converging and Intervening Factors Affecting the Logistics-Strategy Nexus

While the responses to the problems described above were logical, ranging from the inkspot strategy and COIN, to a surge in troop numbers and an increase in available equipment, these actions were inhibited by precisely those factors that circumscribe the operation of the logistics-strategy nexus as discussed earlier. The five factors of policy, resources, information, geography, and the adversary can here be synthesised into two clusters that directly recall the earlier discussion of the importance and effects of military modernisation and strategic uncertainty; first, the complex battle space and area of operations, and second, time lags and volatilities in the supply chain.

First, the battle space and area of operations in Afghanistan in particular, but also in Iraq, displayed a series of interrelated social, geographic, economic, and infrastructural complexities that strategists and politicians did not have to contend with as much when preparing for war along the Central Front during the Cold War. Taking these factors in turn, socially the battle space is complex because these 'spectator sport wars', as McInnes calls them, aim at the 'hearts and minds' of ethnically and religiously diverse populations. For better or worse, these are stereotypically defined by primordial markers.[71] Intelligence and a sophisticated appreciation of the local, societal situation – *information* – thus becomes of prime relevance. This was clearly illustrated in the invasion and occupation of Iraq in 2003. Politicised intelligence and trust in untrustworthy sources, groupthink, a lack of understanding of the country amongst political leaders, as well as a political desire for a small military footprint – *policy* – led to the catastrophic

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[70] James H. Lebovic, *The Limits of U.S. Military Capability: Lessons from Vietnam and Iraq* (Baltimore, MD: Johns Hopkins University Press, 2010), 40.
[71] Cf. Colin McInnes, *Spectator Sport War: the West and Contemporary Conflict* (Boulder, CO: Lynne Rienner, 2002), and Rupert Smith, *The Utility of Force: the Art of War in the Modern World* (London: Allen Lane, 2005).

understaffing of the U.S.-led campaign,[72] and to a shortage of protective kit among UK troops as discussed above. These factors heavily contributed to shortages – *resources* – that created security vacuums that facilitated the breakdown of order along both ethnic and sectarian lines. In Helmand, similarly, the UK 'did not have any clear intelligence picture … it was an empty hole', as the Chief of Defence Staff at the time, General Sir Michael Walker, stated in an interview in 2013.[73] The deployment itself as well as the establishment of additional bases across Helmand province ran up against the 'hearts and minds' objective. For one, the targeted opium fields were the main source of income for large parts of the population, so that their destruction without always providing a viable alternative had an immediate, negative economic impact on the very people that the hearts and minds campaign was supposed to win over. Also, these bases became natural targets for attacks by Taliban-linked fighters that often caused heavy destruction and loss of life among the civilian population. This throws into doubt the benefits of aligning themselves with foreign troops and their objectives.[74] The aforementioned ill-defined nature of the battle space and its deeply social characteristic is thrown into full relief here insofar as combat occurs with little warning, if any, and (often deliberately) in built-up areas, while directly affecting and quite often targeting, in both political and military terms, the local civilian population.

Geographically, the battle space is ill-defined because, rather than cover a subset of a territory, it extends to virtually the entire area of operations and becomes intermittently active or inactive. Furthermore, in many cases the battle space is very far 'out of area', which creates its own set of challenges with strategic access and lines of communication. Logistic activities themselves can become highly political, both domestically and internationally. Internationally, unlike the Central Front during the Cold War, strategic access to theatres of war 'out of area' can be highly volatile. As Christianson puts it, '[gone] are the days when we had the time and resources to position large stores of assets in response to a stable, predictable threat.'[75] The refusal of Turkey to allow the USA to use military bases for the war in Iraq in 2003 (while nonetheless opening their

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[72] On US strategic and political failures regarding planning the Iraq invasion see e.g. Christopher Kinsey, *Private Contractors and the Reconstruction of Iraq: Transforming Military Logistics* (London: Routledge, 2009), 34-40.
[73] Elliott, *High Command*, 139.
[74] Ibid, 134-136.
[75] C.V. Christianson, 'Joint Logistics in the Future,' *Joint Force Quarterly*, no. 41 (2nd quarter 2006): 76-79, at 77.

airspace) – international *policy* – is one pertinent example among many;[76] the repeated closures of the supply lines from Pakistan into Afghanistan, most recently for seven months in protest at a USA air attack on the Salala check point in November 2011, are another.[77] Almost two years later the US military was still clearing stockpiles that had been stored in Karachi during the closure and that had not reached the troops during what was the end of the surge and thus a strategically critical moment of the decade-long Afghan war.[78] The UK, meanwhile, had built stockpiles in anticipation of a fragile line of communication from Pakistan into Afghanistan. Had these closures however occurred early on in the operation, before the stockpiles had been built, this would have posed serious challenges.[79] Moreover, such closures not only place additional burdens on lines of communication and undermined the noted centrality of responsiveness for such interventions. Stockholdings also go against the aforementioned change towards distribution-based logistics. The increased footprint led to additional costs for storage and stock turnover, and additionally significantly complicated redeployments by creating a significantly enhanced management and transport burden.[80] The ability to supply troops thus was closely woven into the international relations with regional powers. The fact that this did not lead to outright defeat does not negative the fact this issue does not represent a significant challenge to the logistics-strategy nexus, especially when it operates in complex, out-of-area operational theatres. In Afghanistan this was at least partly alleviated by the fact that the land lines of communication were operated by local contractors; Pakistan would not have allowed US or UK troops in uniform to move supplies through Pakistan. The use of local contractors also ensured that the local economy profited to some extent by creating business opportunities, and benefited from local knowledge.[81]

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[76] See 'Turkey votes to allow U.S. to use airspace,' *Associated Press* (20 March 2003).
[77] See 'US says sorry, Pakistan opens Afghan Supply Lines,' *Associated Press* (3 July 2012). On access more generally see also Kurt J. Ryan, *Exploring Alternatives for Strategic Access to Afghanistan*, Strategy Research Project (Carlisle Barracks, PA: U.S. Army War College, 2009).
[78] See Amie Ferris-Rotman, 'The Long Haul: the Monumental Task of Packing Up a War,' *Foreign Policy* (September-October 2013), 35-38, at 37-38. The US was also paying $100 million instead of $17 million per month for flying equipment out of Afghanistan rather than transporting it on land through Pakistan in 2013, adding financial pressures on the operation at a time of pressured budgets.
[79] David Shouesmith, March 2015.
[80] Andy Curtis, March 2015.
[81] David Shouesmith, March 2015.

Infrastructurally, Afghanistan, in particular, represented challenges because of the either underdeveloped or heavily damaged road, rail, and air networks that traversed the ill-defined battle space and connected the hundreds of bases COIN operations relied on. On the technical side, the Afghan theatre placed big strains on kit, which did not work properly in the dust and on non-asphalted roads in Helmand. For example, Mastiffs, which were bought in large numbers for Iraq, were too large for some roads. Warrior vehicles required additional armour given the unconventional methods of warfare being used in the country. All of these challenges required modifications and enhanced logistics and support packages to be put in place, which in turn increased the logistic footprint at the expense of combat troops, and ran up against politically set troop caps which we discuss below.[82] More directly implicating operations, military bases and military-linked installations in Afghanistan were estimated to have reached approximately 1,500 in 2012.[83] The result of such a footprint is the replication of the aforementioned dynamic regarding how global postures necessitate massive global supply chains: it creates long in-country 'tail ends'. In our cases, these were shown to be highly vulnerable to attack, prone to overstretching military personnel on the ground, and risking the alienation of the civilian population when it becomes exposed to violence when it ties its economic wellbeing to cooperating with or supplying foreign troops, as the next paragraph explains.

Economically, finally, the battle space can become particularly complex because the stabilisation component makes swift economic development a key marker of success. In 'new wars', however, warfare and the continuation of hostilities become objectives in and of themselves for some of the adversaries. This creates a shadow market that directly competes with the attainment of stabilisation objectives. For example, local sourcing in Afghanistan was complicated because Taliban-linked groups often targeted local businesses that supplied foreign troops. This immediately attacked the objective of encouraging domestic economic growth by hiring local suppliers and workers for the supply of troops and the ongoing (re)construction efforts. It potentially forced the victims to cease cooperating with foreign troops or even to side with the insurgency. The local economy thus becomes a key battleground, where tying local producers into one's own fold acquires strategic importance. Economic objectives thus not only clash

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[82] Ibid.

[83] Nick Turse, 'Afghanistan's Base Bonanza,' *Tom Dispatch* (4 September 2012), available at http://www.tomdispatch.com/blog/175588/, accessed 2 October 2013.

regarding the ceasing of hostilities more narrowly, but also regarding the broader sense of victory when swift economic development becomes a key marker thereof.

Moreover, running and coordinating combat, stabilisation, and reconstruction operations in parallel is highly challenging and is made even more complex by the outsourcing of much of the non-combat effort. Substantive parts of reconstruction funds in Afghanistan were found to have been paid, usually by various contracted workforces, to Taliban-linked groups for the protection of transports and of the very development projects intended to undermine the Taliban's appeal.[84] The realisation of some stabilisation and reconstruction projects thereby inadvertently undermined the stabilisation and counterinsurgency effort. This can at least in part be attributed to the difficulties in overseeing a supply chain and a web of implementing actors on the ground that is defined by the low visibility of various layers of contractors and subcontractors who are not controlled in the same way a military supply chain would be. Thus, holding a key role in the reconstruction of the 'regular' economy, the logistics of such operations acquires strategic importance, while the potential funding of the shadow 'war economy' risks offsetting its contribution.

Secondly, a series of factors leads to time lags, delays, and volatilities in the supply of war that directly affects the ability to implement a strategy. There are several causes of such time lags and delays. They are located within the political, budgetary, and industrial spheres (i.e. *policy* and *resources*), and compounded by a crucial intervening factor making the supply of war within the existing parameters even more challenging – an adaptive *adversary*. On an operational-strategic level, there was a frequent turnover of tactical commanders in Helmand, many of whom developed new plans to pacify the province.[85] By the time new equipment for these particular plans arrived, a new tactical commander was usually in place, while the assets inherited from the previous commander's plans often did not fit into their own plans for the province.[86] More coordination and continuity of such supply efforts on the strategic levels could clearly have alleviated some of the resulting pressures. Additionally, operational security concerns also led to

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[84] See U.S. House of Representatives, Committee on Oversight and Government Reform, Subcommittee on National Security and Foreign Affairs, *Warlord Inc.: Extortion and Corruption along the U.S. Supply Chain in Afghanistan* (Washington, D.C.: Congress of the United States, 2010), 2 and *passim*, and Mark Mazzetti, Scott Shane, and Alissa J. Rubin, 'A Brutal Afghan Clan Bedevils the U.S.,' *New York Times* (25 September 2011), A1.
[85] Elliott, *High Command*, 131.
[86] David Shouesmith, March 2015.

delays on the operational-strategic level. In Iraq, for example, implicating the widespread contractorisation of military responsibilities, some logistics problems occurred because the security clearances required to participate in the planning for the invasion of Iraq in 2003 exceeded those held by the U.S. Army's Logistics Civil Augmentation Program's (LOGCAP) contractors in the planning section. LOGCAP contractors then had little time to meet the requirements that had been set by the military.[87] The situation in the UK with Contractor Logistics (CONLOG) is very similar. According to retired Major General Jeff Mason, former Assistant Chief of Defence Staff for Logistics (ACDS (LogOps)), the principle is 'that when PJHQ [Permanent Joint Headquarters] is planning they should include those embedded contractors – currently from KBR – in the planning process: I am not sure that this has happened recently, and that there is still a boundary that comes down so that contractors are not involved in the planning.'[88] As a result, there can occur avoidable time pressures and forces may face a potentially a lack of equipment in the early phases of an operation. In the case of Operation TELIC in Afghanistan, for example, the House of Commons found that 'the need to maintain operational security and the speed of deployment prevented the [UK MoD] from engaging with industry early enough to allow all the required supplies to be delivered on time'.[89]

More complicated still, the interplay between industry, politics, and defence budgets is prone to delay modifications and new support deliveries. As noted above, one result of '[cashing] in on the peace dividend' and of modernising military supply chains was the reduction of stocks to the lowest possible levels, leaving the military to '[conduct] operations at the end of a very fragile, long line of communication with reduced inventories'.[90] The end-user thus sits at the end of a long, increasingly privatised supply chain that comprises numerous vulnerabilities that begin at the home base and extend thousands of miles away down to the smallest outpost in rural Afghanistan. As Wiggins explains, there is a drag-coefficient between the pace of an operation and the ability of industry to meet changing requirements.[91] Operational and logistical planners thus

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87 See Dina Rasor and Robert Bauman, *Betraying Our Troops: the Destructive Results of Privatizing War* (New York: Palgrave Macmillan, 2007), 15.
88 Interview with Maj. Gen. (ret) Jeff Mason, February 2012.
89 UK House of Commons, Committee of Public Accounts, 'Ministry of Defence: Operation TELIC – United Kingdom Military Operation in Iraq,' Thirty–ninth Report of Session 2003–04 (London: The Stationery Office, September 2004), 8.
90 Leary, *Sustaining the Long War*, 8.
91 David Wiggins, July 2013.

continuously had to respond to shortages and rely on industry's ability to deliver adapted products and services on short notice, as the military is increasingly unable to produce goods and services from in-house sources due to understaffing and knowledge transfer out of the army. Within just a few years, for instance, the British Army had lost the in-house knowledge to build temporary deployable accommodation, with one witness observing that '[the] Royal Engineers working on Camp Bastion had never built' such accommodation before.[92] This state of affairs fully incorporates our previous finding that integral actors are now located on virtually all layers of the military supply chain. Together with the high maintenance and modification requirements, this led to the creation of in-theatre equipment and support capability, which is generally delivered by contractors. Nonetheless, a lot of this provision takes time. For instance, to tackle the shortage of Chinook helicopters the rotary wing hours were increased from 250 to 400 hours per month, but this process took twelve to eighteen months of working closely with industry.[93]

Additional delays to the noted time it takes providers to supply modifications and new kit result from the political and budgetary processes. The UK contingent in Afghanistan was capped as a matter of politics, eventually at about 10,000 uniformed troops. Plans to send additional equipment into theatre then quickly run up against such caps because additional kit means additional support troops on the ground. In the early phases of the Helmand deployment, Mason recounts situations such as deploying 'an extra four helicopters, that is probably an extra 100, 150 people, which you then have to balance because politicians will say 'what are you going to take out to keep the force at 3,600?'"[94] Part of the answer lay in outsourcing as much as possible of the logistical 'tail end' of the operation, which meant that the UK effectively ran an operation with 10,000 troops that would usually have required about double the numbers of soldiers. Yet even with outsourcing, the funding mechanism of contingency operations – which are paid for by the Treasury rather than the MoD – and the variability of the adversary represent two additional complexities for supplying war and implementing a strategy. Wiggins offered an anecdote about the Mastiff vehicle that is worth quoting at length here as illustrative of this:

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92 David L. Scholes, *Without Prejudice: Iraq, Afghanistan. A Personal Account of Nations in Conflict* (Leicester: Matador, 2008), 196.
93 David Shouesmith, March 2015.
94 Jeff Mason, July 2013.

> Mastiffs were procured with a limited, twelve-month support package in line with Urgent Operational Requirements (UORs) policy at the time. The overall spend outstripped the available funding for all of the UORs needed at that point in the campaign and therefore we were put under pressure to prioritize the purchases of spares. As the Taliban were concentrating their attacks on the front axle assemblies, these were procured as a high priority at the expense of other spares. Unfortunately, as is his habit, the enemy then changed the point of attack on the platform, to other areas of the vehicle. This in turn meant that we were sitting on a sizeable supply of front axles but were challenged to conduct repairs on other parts for which we lacked the correct spares. We were thus forced to go back to the Treasury and request further funding for the new spares and manage a further delay as industry was unable initially to provide the quantities required to cope with the immediate surge in demand.[95]

In summary, therefore, as we argued at the outset, policy, resources, information, geography, and the adversary interact in the logistics-strategy nexus by shaping the logistics system in place as well as circumscribing that system's ability to make possible the implementation and sustainment of a given strategy.

Conclusion

The main argument of this article is that logistics constrains strategic opportunity, while at the same time it is itself heavily circumscribed by strategic and operational planning. Importantly, this relationship is deeply reciprocal and dynamic over time. Therefore, the study and conduct of war and strategy must account for logistics as it 'is not merely a precondition to military operations [but] an integral component of the art of war'[96] without which analyses of war are incomplete at best or false at worst. At the same time, the literature on the wars fought since the end of the Cold War, including the sizeable body of literature on COIN and recent wars that emerged in the past decade, all but bypasses logistics with only few exceptions.[97] This article therefore set out to argue for a reappraisal of the critical role of logistics and indeed its centrality to war and strategy. It

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[95] David Wiggins, July 2013.
[96] Kane, *Military Logistics and Strategic Performance*, 10.
[97] U.S. Army Field Manual 3-24 recognizes the unusual role that military logistics plays in COIN operations, i.e. that 'support provided to the population may become … the decisive operation. Logistics providers are often no longer the tail but the nose of a COIN force.' U.S. Army, *Counterinsurgency: Field Manual 3-24* (Washington, D.C.: Headquarters, Department of the Army, 2006), chapter 8, 1.

did so by conceptualising the logistics-strategy nexus and then empirically illustrating its operation in UK military operations in Iraq and Afghanistan since 2001.

These operations are important in that the outcome in each case cannot be fully comprehended without also accounting for the impact logistics had on them. Both operations make a very strong case for why it is so important to fully incorporate logistics at every stage of geo-strategic, operational, and tactical analysis. As the evidence showed, this does not always happen in practice. Instead, geo-strategic and operational decisions were made with insufficient consideration of their relationship with the logistics systems responsible for generating the means for their implementation. As the outcome of both operations clearly showed, marginalising logistics is to neglect important parts of the political, strategic, and economic realities associated with war.

Both the wider literature as well as the COIN-specific literature therefore require a reappraisal. Often, the main focus of such studies is on the weaknesses of a strategy, such as the lack of political will to stay the course or the lack of troop numbers. Instead, larger questions require addressing. Some may broach the difficulties of streamlining acquisition, improving the use of contractors, or conducting deeper anthropological study. Others may see the complexities discussed in this paper and the consequences that may arise out of their underestimation to revisit the utility of force and to question the maintenance of a mismatch between ends, ways, and means. In all of these, military logistics is about more than just Napoleon's dictum than 'an army marches on its stomach.' It is a central factor that determines the occurrence, conduct, and outcome of war – on and far beyond the battlefield.

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