Citadels and Marching Forts: How Non-Technological Drivers are Pointing Future Warfare Towards Techniques from the Past

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Future warfare is frequently imagined through the prism of technological change. Because our era is dominated by information technology it follows that future warfare will be also. This article argues differently, that the key drivers of conflict nowadays are actually non-technological, or at best secondarily technological in origin. The practice of warfare now is in fact highly static, positional, exceedingly cautious and characterised on the ground above all by new forms of traditional military technology—fortifications. If we understand present trends correctly and they continue then the future of warfare looks less like the manoeuvrist visions of extant doctrine and more like the patterns of warfare of centuries past.

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The basic syllogism of military futurology usually goes like this: The character of warfare at any given point is determined by the dominant social technology. X is the new or emerging dominant social technology; therefore, future warfare will be X warfare (e.g. Toffler & Toffler 1993). For the value of X nowadays it is common to insert ‘knowledge’, ‘information’ or ‘network’. It follows that future war will be network-enabled and information-oriented with ever more precise, ‘smart’ application of force—a perfect realisation of the old adage ‘knowledge is power’.

Decision in war might even come to turn on informational effects alone with sophisticated new social media-powered subversion and disinformation campaigns undermining entire societies, reshaping their political beliefs and ideals, steering them towards the adoption of policies contrary to their interests. Meanwhile, cyberattacks on critical infrastructure could cripple a society and bring it to defeat without a single shot being fired. Future warfare in this mode of thinking involves a great deal of intangibles; as knowledge is the key factor in economic strength, so too is it in the military sphere.

Be this as it may, it behoves us to consider at least two other things, which in turn suggest a possible future quite different to that above. First, stuff—tangible, physical, elements of power—still matters very much, and, second, some of the most obvious drivers of the character of warfare right now are non-technological (or only indirectly related to technology). They include:

- A leadership perception of war as essentially a tool of consequence or ‘risk management’ rather than for the pursuit of victory per se (Coker 2009);
- which is especially consequential in offensive liberal wars or ‘wars of choice’, such as have typified the landscape of security affairs since the end of the Cold War;


both the above being aggravated by advancements in connectedness that expose the ‘home front’ to formerly distant ‘small wars’ in ways that consistently imperil the maintenance of political will in the event of small tactical setbacks.

These seem likely to continue to strengthen in coming decades—a[...]
over a wide territory. The influence of the citadel was not confined to the range of a bowshot from its highest
tower. On the contrary, the ancient and mediaeval soldier was supposed to be out patrolling, ‘walking the
beat’, looking for trouble or warding off trouble, as the case may be, out to a distance of one day’s march out
and safe return to base (Warner 1991: 5).

One can see the strategic logic of the classic citadel written across the landscape of the Western world
from Wales to the Holy Land, even today (Hogg 1981: chapter 3). Cantonment is another term that might
be applied here, understood as a long-duration encampment or base for the quartering of military and para-
military troops. The permanent military installations of the British Raj were referred to as such, and many
of these came to incorporate civil administrative facilities as described of the citadel above. The point here,
though, is not to recap the history of millennia of military fortification. It is, simply, that the strategic uses
of fortification extend greatly beyond the mechanical necessities of battle.

New Citadels
Consider the map in Figure 1, for instance, which shows the major NATO airfields, forward operating bases
and other key encampments in Afghanistan in 2011 along with the main population centres and key highways and river valleys. The areas where fighting with the Taliban was the most intense are also marked. It could just as well be a map of Teutonic castles in Prussia or English castles in Wales. In terms of their mutual proximity, relationship with population centres and enemy action, and location astride transportation and communications networks, the logic of where they are located and why is entirely strategically similar.

At a greater level of granularity, we might observe that some of these are sustained primarily or solely by
air, which obviously allows for greater distances to exist between citadels, in theory. Yet, strikingly, in prac-
tice, aside from a few, most are still located about one day’s march apart, essentially where Alexander the
Great placed variants of them 2,500 years before.

In August and September 2010, I was in Afghanistan at the invitation of ISAF in order to conduct research
on its strategic communications campaign. During the course of the stay I visited several of these outposts,
mainly in and around Kabul and Kandahar, including Kandahar airfield and Kandahar city, as well as Camp

![Figure 1](https://example.com/map.png)

**Figure 1**: Map of ISAF bases in Afghanistan ca. 2011. Source: Washington Post (15 March 2012).
Bastion (marked above as Camp Leatherneck, a neighbouring American base) and Lashkar Gah, both of which are in Helmand province (Betz 2011).

The experience was highly instructive, though my main and lasting observations were not what I had expected them to be. The sketch in Figure 2 is one I did on a late afternoon at Kandahar airfield, which was then arguably the largest NATO base in the country. It represents an extremely typical scene: A soldier is seen restringing a coil of razor wire atop the double-stacked Hesco barrier forming the perimeter of the base. On one side of the barrier was a slightly odd, abnormally dusty town full of industrious office workers and blue-collar tradesmen; on the other side was a ditch, another string of razor wire and then Afghanistan—effectively still a far, distant country for all but the tiny fraction, not more than ten per cent, of those inside who were authorised to foray beyond the ramparts.

The passing thought which occurred to me as I sketched the above was to wonder what in a thousand years from now archaeologists will think of the mysterious Hesco Empire that exploded from nowhere suddenly in the first years of the third millennium AD to leave its mark seemingly across the globe. Perhaps they will infer from it the perimeter of the expeditionary campaigns of the Global War on Terror. Maybe, though, they will perceive some larger relative meaning.

Essentially a gabion, a 15th-century technology, a basket that filled with earth and rubble creates a stout ballistic barrier, the Hesco bastion is a work of simple genius—flat-packable, stackable, standardised, modular and cheap. It symbolises the Afghanistan war in a way that the Huey helicopter did the Vietnam War. In the latter we reinvented cavalry as air cavalry, delivering flanking attacks and coups de main from the sky; in the former we reinvented castramentation—modular, flat-packable, semi-instant fortresses mixing military engineering with the design philosophies of LEGO and IKEA.

It is customary to decry this state of strategic affairs. For one thing, it is highly morally dubious on a number of levels. As an example, I recall drinking a strawberry milkshake after a good lunch in the cafeteria at Kandahar airfield while reading a Congressional Research Service report explaining how the Taliban was thriving on protection money paid to it by commercial firms servicing ISAF’s own supply chain (Subcommittee on National Security and Foreign Affairs 2010). On the other hand, there is little reason to expect anything fundamental to change. The urge to ‘do something (but make it cheap)’ that animates so much of the West’s strategic enterprise shows no sign of permanent decline, however salutary the lessons of Afghanistan and Iraq. Indeed, given the apparently likely effects of climate change on environments in Africa particularly,

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Figure 2: Sketch by author of Kandahar airfield perimeter. Afghanistan, September 2010.

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5 Hesco’s products and case studies of its works are available on its website: https://www.hesco.com.

combined with schismatic civil war in the Middle East, on top of massive population growth in the region, there is good reason to think it will increase.

There will inevitably be many more occasions where in order to do anything in a place, strategists will have to create such bases because they will need to protect a lot of very expensive soft targets in a low-security environment—possibly the means of building an entire new civil administration—as well as a range of machines requiring specialist support, often non-military, plus policemen and the means to train new police. Technology is not driving these things, except insofar as information technology plays some role in the risk-averse dominant culture that underpins the tenuousness of political will.

An obvious necessary condition is that we will be fighting campaigns aimed at status quo maintenance, as cheaply as possible, against relatively weak (albeit highly motivated) spoilers, radical opportunists and feral gangs, but not against peer competitors. A less obvious driver is the insurance industry, which is one of the reasons that the humanitarian sector is one of the major buyers of Hesco’s defensive products, because of the need to provide secure refuge to highly insured specialists, even when they are unpaid volunteers.

Or consider another example: A large multinational agricultural conglomerate recently determined that advancements in dry climate agriculture had made Sudan an ideal place to invest. Sufficient water is available, as are vast tracts of good enough quality land, making it perfect for the use of the massive, largely self-driving, satellite-controlled combine harvesters that the company has pioneered the use of in North America. The problem: insurance of the combines (for point of reference of the value of such machines the total annual demand of the whole North American market for them is just 350 units) and of the practically irreplaceable personnel who service them. Result: no investment—despite the critical need of Sudan for food and a means of generating wealth.⁷

A problem with the citadels that I visited in Afghanistan is not that they are out of place and time, because in actuality they are perfectly well-placed, and the time is as right as ever; quite clearly the place is ill-administered. The problem is that they are neither awesome nor harnessed in any plausible way to a long-term plan of governance. Edward I’s castles in Wales were built to last and to exude power both literal and symbolic, permanently. The ‘Teutons’ Marienburg fortress is still a thing of terrible beauty, though it is no longer a seat of power; for that matter, although it no longer exists, having been subsumed by the city of Grozny, the Groznaya fortress built by the Russians in 1818 to cement the conquest of the Caucasus literally meant ‘awesome’.

Kandahar airfield is a gigantic and impressive display of military power, to be sure, as is Camp Bastion and other outposts of the Hesco empire, even the rather ramshackle ISAF headquarters in the centre of Kabul, but what it exudes is a message of impermanence and strategic tremulousness and not awe—powerful, but temporary. There is little there that cannot be taken away easily or abandoned without regret. Ironically, it was trying to help some people communicate to Afghans the message ‘we are here to stay; whatever happens you will be protected’, who happened to be living in tents and working out of shipping containers as they said these things, that made me realise that ‘stuff’ still matters.

For a vision of the future, then, we might well start with the scene pictured in Figure 3, which is an illustration of a police fortress in Latrun in present-day Israel, now an Israel Defence Forces army base and museum. It is one of more than 70 designed and built by Sir Charles Tegart, a renowned British imperial policeman, as part of a system to suppress the Arab Revolt 1936–39 and to police mandatory Palestine.⁸ Most Tegart forts are still in use of one sort or another—prisons, police stations, courts and military headquarters, for instance (Connolly 2012). They are sturdily built structures of thick concrete reinforced with steel, have secure water and power supplies and extensive internal living spaces, offices and equipment maintenance areas. As with the other pacification systems already described they are sited as a network purposefully in relation to population centres and transport routes. While unlikely to win any architecture awards, they are not aesthetically unappealing.

Imagine this, but very much larger with an integrated air-landing facility, power generation and an additive manufacturing capability, probably built around the major physical infrastructure of the national civil communications network and packed to the rafters with civil administrators and engineers, police and intelligence officials, public health experts and logisticians, plus the guards needed to keep them relatively safe.

⁷ Interview by author with the chief executive of this firm who wishes to remain anonymous (London, 20 November 2018).

⁸ The counterinsurgency literature is surprisingly silent on Tegart given his prominent place in the history of imperial policing in India and Palestine over three decades. The Israeli scholar Gad Kroizer (2004) has done the most work on him.

It is not a very sexy vision of the future, but it is in line with deeply set political attitudes, economic imperatives, proven and likely technologies as well as in the long view of military history some fundamental tactical realities. It certainly smacks of imperialism, which might put some Western powers off. There is no reason to expect, however, that more ambitious global powers would feel the same; the citadels will be there, no matter whose flag flies over them.

**Old Marching Camps**

A marching camp is usually a field expedient castle built by a military force that is on the move when it is forced to halt by darkness or fatigue in uncontrolled territory. However, they can be more permanent and serve purposes beyond resting up in safety. The legions of the Romans are usually held up as exemplars of the practice, generally rightly; every summer, even now, aerial photos of the fields of Europe reveal the ghostly markings of ancient military movements. Legionnaires carried with them all the tools needed to dig a ditch and berm barrier around their camp and to construct a functional palisade (Campbell 2006).

The initial marching fort is essentially a deterrent against skirmishers and opportunistic raiders; it is decidedly better than nothing, but still essentially a makeshift—not a strongly developed defensive position suitable for major battle or siege. Typically, they were used when it was desired to plant a small garrison in hostile territory, with stout enough defences for some resistance, often while maintaining supply lines for more mobile elements. Since marches tended to occur along established routes, and hostile areas usually became pacific, over a period of time marching camps could acquire a degree of permanency, being gradually improved over time with deeper and more regular ditches, stouter and higher palisades, just as watchtowers and gatehouses might be added, interior buildings improved and so on (Campbell 2009).

For example, in **Figure 4** we see a sketch of the reconstructed Lunt Roman fort, which is found near Coventry in Britain. Originally a marching camp, probably built during the bloody campaign to quell the rebellion of the Britons under Queen Boudica in 60–61 AD, the site was inhabited for about 20 years, then abandoned and reoccupied for a while a hundred years later, before vanishing from history until rediscovered and partially reconstructed in the 1970s.

The point here, again, is not to recap a great and detailed history of Roman military techniques. It is, rather, to suggest that the marching camp is not a piece of dead military technology. On the contrary, it was, and is, an essential tool of 'asymmetric warfare', in modern parlance, which is why it is fitting that the gate pictured above was constructed by the modern Royal Engineers using period techniques and tools.
New Marching Camps

Let us return then to contemporary Afghanistan to see some examples of how central the marching camp is to military practice now. In Figure 1 we have seen already the locations of big bases, new citadels, but to get an impression of the number of marching camps we might as well empty a pepper pot across the map as they are so many and transient. Some, though, are well established, as for every large forward operating base there will be a larger number of smaller combat outposts garrisoned by as little as a platoon of troops.

The scene captured in Figure 5 conveys a lot about the past, present and future of warfare. I sketched it during a brief stop on the return to base after a visit to the Maiwand district centre in Kandahar province. It shows the view from the crumbling mud ramparts of a 19th-century caravanserai, a sort of marching camp for merchants and travellers, many hundreds of which line the route of the ancient Silk Road, which also happens to be Afghanistan’s Highway 1. In the distance is the site of the 27 July 1880 Battle of Maiwand during the 2nd Anglo-Afghan War, one of the many tactical setbacks the British empire suffered even at its height; two brigades on the march were routed and over a thousand men were killed. In the foreground lies the wreckage of a Soviet armoured personnel carrier, detritus of a more recent conflict. It was not possible to get closer to either site, because the area outside of the district centre and off the main highway was considered too dangerously uncontrolled. Some local shepherds, presumably, milled around a rough tent nearby.

A few miles to the east of the caravanserai is a working marching camp, a combat outpost, which was part of a network of them supporting an FOB another 20 miles away. It is perched upon a rocky outcrop overlooking Highway 1 and has the same basic construction as described earlier—gabions piled into a parapet, a watchtower and a large radio mast—all surrounded by wire. The job of the outpost was to observe movements on and around Highway 1 and to repeat communications signals from more distant headquarters out to further outposts and patrols. The Hesco of which it is formed rests on the foundations of an outpost built by Alexander the Great’s army nearly 2,500 years ago to do exactly the same thing: stare out ceaselessly at the bone-dry crematorium of rock and sand which is the surrounding landscape looking out for trouble.

As noted above, however, more typically the marching camp is a temporary affair, a thing which is occupied for hours and days—quickly erected and just as quickly dismantled or abandoned in the course of...

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Figure 4: Sketch by author of Lunt Roman fort at Baginton near Coventry, England. May 2017.

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mobile operations. These, too, are increasingly common, particularly in the Middle East. For instance, over decades of conflict within its own disputed borders as well as in occasional forays beyond them Israel’s ground forces have made extensive use of armoured bulldozers in military operations in numbers that are unusual. In fact, since the 2nd Intifada at least the speed of Israeli manoeuvre operations has been governed by that of its lead element: the D9 bulldozer lumbering forward at five miles per hour, not main battle tanks capable of sprinting ten times as fast. 10 This is because the primary threat to heavy armour in asymmetric conflict is the large, buried Improvised Explosive Device, and no route can be considered safe, even for tanks, until the ‘battlespace’ has literally been shaped by a behemoth shovel.

More recently, we can see a further development in tactical earth-moving, this time in response to the mounting scale and sophistication of Vehicle Borne Improvised Explosive Device (VBIED) attacks. In the battle with the Iraqi Army for control of the city of Mosul Islamic State forces employed VBIEDs as a ‘precision weapon’, including in armoured variants, extensively and in combination with other arms, coordinated by motorcycle observers as well as unmanned aircraft systems. In response, Iraqi units constructed ditches and other barriers around themselves and throughout the city to slow and canalise the threat (Mosul Study Group 2017: 36). Ultimately, all major road movements would be accompanied by a bulldozer on a flatbed truck. When forced to halt, instead of simply setting out pickets and heavy weapons in watch of directions of potential attack, the bulldozer would be used to dig a ditch and berm enclosure, the classic marching camp form, thus providing a good measure of defence against truck and car bombs. 11

The advantages of operating in such manner are multiple, including fewer civilian casualties, as potentially jittery soldiers are less likely to open fire on unidentified vehicles approaching their perimeter. The disadvantages, though, are significant: For one thing it cannot work without wrecking any civil infrastructure that is present—sewers, water mains, utility cables and road surfaces. How to square such operations

10 From an interview by author with a retired IDF tank battalion commander (London, November 2018). See also Johnson (2011, 45–46) and Farquhar (2009, 93).

11 Interview by author with a British Army officer who was part of an advisory team in Iraq during Mosul operations (Brecon, Wales, March 2018).
in an urban setting in the context of a counterinsurgency or stabilisation campaign, where the good will of the population amongst whom the force is operating is a main objective, is very challenging. Even more difficult to contemplate, though necessary, is how to employ such tactics within one’s own cities, amongst one’s own population, in the case of sustained significant civil uprisings—a hint of which may now be seen in the ‘Yellow Vests’ rioting in Paris.

A picture of what a partial solution may comprise is already emerging around the margins of military engineering conferences and in the marketing brochures of firms selling defensive barriers and counter-mobility systems, the latter very often focussed on changes to urban infrastructure for domestic counter-terrorism purposes. One of these firms, Kenno, a Finnish manufacturer of laser-welded steel-sandwich components, has developed with the Finnish army what is for all intents and purposes a surface-mounted, reusable, modular Roman marching fort that can be assembled without specialist tools by a small team in a few hours. As may be seen in Figure 6, a drawing based on an advertising photograph of a Balpro tower set amongst the dunes, all that is missing is a legionnaire to complete the Beau Geste scene.

Figure 6: Sketch by author of a Balpro modular watchtower and fort in an unknown location amongst dunes drawn from an advertising brochure/data sheet with addition of a legionary soldier and Roman imperial eagle.


Technical data and a video of the Balpro system may be seen on the company's website: http://www.kenno-shield.com/balpro/force-protection-balpro-products/.
Conclusion

Military futurology is good business, if nothing else, because of the strong appetite of general consumers for entertainment, whether literature, film or increasingly video games, that take their themes from one or more of the many apprehensions of the present—social, political, demographic, environmental, scientific and so on—and extrapolate from them to illustrate the best or worse of what is to come. Science fiction, even more so the alt-history subgenre, as has often been observed, is a convenient device for commenting on the present.

The point need not relate directly to policy and future war planning in any specific sense. Take, for instance, Nevil Shute’s early Cold War era *On the Beach*, a post-apocalyptic story of a group of people in Melbourne, Australia awaiting the arrival of certain death in the form of a wave of radioactive nuclear fallout caused by a general nuclear exchange in the northern hemisphere. But often the policy point is up front, usually a message to government that it should spend more. General Sir John Hackett’s *The third world war: A future history* is still the best example. The value of Hackett’s alt-history of a full-scale war between NATO and the Warsaw Pact rests less on its artistic merit than its astute tactical and strategic insights and fluency with the mechanics of modern warfare (Hackett 1982). This should be no surprise, as he was an immensely experienced field commander.

The key theme in such stories is often technological, indeed most times weapons technology is practically the main protagonist—the human characters playing second fiddle, background, as it were, for the exciting tactical tableaux (e.g. Clancy 1986). In real life, however, the technology is the scaffolding; what matters most is the politics. The main elements of the current political context have already been mentioned, but to recap they include acute political risk aversion, a general perception of the lack of utility of war *per se* and a condition of global connectedness that makes it difficult for governments to keep small wars in the far abroad off the domestic agenda. A few others have been addressed obliquely and perhaps merit a bit more spotlighting.

First, there is demographics, specifically the rapid shrinking and ageing of the native populations of all Western countries, especially Europe, in contrast with the rapid growth and youth of populations neighbouring them, particularly in Africa and the Middle East. Second, there is an economic division, which again exhibits a strong and growing divide between a rich, albeit relatively diminishing north and a poor south that is persistently unable to sustain means of non-resource extraction-led wealth generation. Third, there is a divergence of mood in which we see the richer, fewer and more elderly northerners animated more and more by fear and apprehension, while the poorer, more numerous and youthful southerners are moved more and more by anger and humiliation (Moisi 2009).

Fourth, there is a problem of state capture by a narrow political elite that is predatory at worst, indifferent at best of the needs and wants of the general population—an endemic problem in much of the world, but one increasingly perceived now also in the West. Fifth, there is the matter of security which is failing widely, but particularly awfully in the ‘near abroad’ of both Europe and the United States. From the perspective of Europe, the opposite shore of the Mediterranean is descending further into what looks like an Islamic version of the Thirty Years War—a war that consumed a third of the population of central Europe. Meanwhile from the perspective of the United States, Mexico is in the midst of a generational drug-fuelled civil war and Venezuela’s economy is melting down, while several other South American polities teeter on the brink of greater or lesser disaster.

Sixthly, there is the X factor, an unpredictable, but perfectly plausible event that might deliver an almighty shock to a system that does not look greatly as though it possesses the resiliency to absorb a mild setback, let alone the almighty smack of an ‘act of God’. Such like might include environmental collapse, particularly of food agriculture in poor and populous regions of the world, a natural or man-made pandemic anywhere, a nuclear exchange between any number of new and aspiring nuclear powers, a severe cyberattack on critical infrastructure, old school wars and genocide or just a grinding decades-long miasmic combination of political chaos, covert and overt factional violence, and economic and moral decline that deranges a civilisation.

The list is hardly all-inclusive—might as well add meteor strike to it. The point is that the future of war looks very healthy; another bloody century seems quite the likely prospect. It is troubling, though, that the

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15 Richard Shireff’s more recent *2017: War with Russia: An Urgent Warning from Senior Military Command* (2016) is an even more direct work of advocacy.

conception of it that dominates the minds of the defence establishment of the Western world, particularly, seems detached from the lessons of their own recent experiences of warfare, often ignorant of long history, even military history. They are rather obsessed with technology and consumed by a minor, if comfortingly recognisable, threat, while a host of major challenges loom larger behind them. What is currently called the ‘refugee crisis’ in Europe has the potential easily to be 15 or 15 times larger at any time.

The great military powers of the world still idealise the concept of manoeuvre. It forms the core of their doctrine, it is invoked in their field manuals, and it is the Zeitgeist that informs the education and training of practically everyone in uniform from section commanders to division commanders and to the heights of leadership beyond. The ‘manoeuvrist approach’ has something of the quality of an ideology—a set of ideas and ideals that underpin a theory of military science that emphasises momentum, tempo and agility, doing the unexpected, using initiative and seeking originality (Land Warfare Development Centre 2010/2017: 5–01). The future of war as envisioned through the manoeuvrist prism is information-oriented with high-tech armed forces fighting more leanly, quickly and to more decisive effect than ever before with ever more precise, ‘smart’ application of force. It is why Russia is still the supreme bête noire in the corridors of NATO and various European capitals, despite its economic impoverishment, practically nationally suicidal demographics and political backwardness.

Fortification, by contrast, barely gets a mention in staff colleges nowadays, while in the academy it is a niche of a niche of largely historical study. It is seemingly superseded by advancements in the power and accuracy of weapons and the development of the mobile, fluid tactics that comprise the modern system of peer-on-peer conventional warfare. Indeed, in the mid-1980s when one of the founders of the manoeuvre warfare literature searched for a term to disparage the opposing, supposedly anachronistic concept he wished to displace, the phrase that sprang to mind was ‘Maginot Line mentality’ (Lind 1977: 61). Fortification certainly has not been seen as a main feature of future warfare; it is hardly even seen as very pertinent to contemporary warfare, where manoeuvre = goodthink, whereas fortification = badthink.

This is odd, because it is contrary to a perfectly obvious reality, which is that in practice warfare has not been much manoeuvrist for a generation at least; instead it has been highly positional and static, with fortification playing a visibly dominant role in operations. Momentum, tempo and agility are in no ways resonant descriptors of military operations in either of the ill-fated major expeditionary campaigns of the Global War on Terror, except arguably for a couple of weeks at the beginning of each. Whether the current situation was avoidable, let alone desirable, is something of a moot question. It is what it is.

To apprehend the future even ‘through a glass, darkly’, as it is written in Corinthians, we really must start from a clear vision of the present. And the truth of the matter is that not since pre-Napoleonic days have the precepts of positional warfare, fortification and siege craft so dominated the conduct of military operations as they do now. It was not through cowardice, lack of imagination or skill at arms that soldiers of the early modern era thought of warfare primarily in positional terms. The reality was that in those days big field battles were rarely fought; the preponderance of military effort was devoted to the attack and defence of fortified places or limited manoeuvres to pose the threat of such an attack. Moreover, the armies of the day were so exquisitely expensive and small that only incompetent generals and foolhardy kings would lightly risk them (Bauer & van Tuyll, 2008: chapter 4). Similar imperatives prevail today and look likely to continue to prevail, indeed they seem most likely to be reinforced, as statesmen and commanders struggle to manage the very large problems described above, possibly while the pot of resources available to them shrinks.

**Competing Interests**

The author has no competing interests to declare.

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