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## **The case for the UK considering a new approach to Asymmetric Warfare**

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## Executive Summary

### 1. Introduction

Asymmetric Warfare refers to unconventional strategies and tactics adopted when the military capabilities of belligerent powers are so different that they cannot make the same sorts of attacks on each other<sup>1</sup>, typically guerrilla warfare and terrorist tactics. The information age and the democratisation of technology has given our adversaries affordable opportunities to find an edge in new ways, such as orchestrated disinformation, cyber attacks, technologically enabled economic warfare (cyber crime), public health (e.g. China's failure to stop the flow of fentanyl precursors into the United States<sup>2</sup>) and other factors.

This paper explores what an incoming Government could do, within the constraints of budget and public accountability to address the challenges and take the opportunities that this situation presents.

### 2. Opportunities

While the challenge is great, the UK enjoys an academic, engineering and technological advantage. If the UK can tap into this resource, we will be able to get and stay ahead.

**Experimentation.** One partial mitigation might be to support small projects with no specific outcome. Establishing such projects in key technologies could keep the UK at the leading edge of materials, additive manufacture, uncrewed vehicles, artificial intelligence etc<sup>3</sup>.

**Leverage the 'Citizen Army'.** While military recruitment is proving to be fiendishly difficult,<sup>4</sup> the UK could better encourage and support its citizen army, to conduct operations in the national interest in areas such as cyber and information; as Russia<sup>5</sup> and Ukraine<sup>6</sup> have already done. For the UK to achieve the same would require some careful moral and safety considerations but it could be highly effective if managed correctly. Prize giving and incentives, e.g. the XPrize Foundation<sup>7</sup> and Earthshot Prize<sup>8</sup>, could play a part in this by stimulating the required activity without the need for formal contracts and programmes.

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<sup>1</sup> Sexton, E.. "asymmetrical warfare." Encyclopedia Britannica, November 30, 2023. <https://www.britannica.com/topic/asymmetrical-warfare>.

<sup>2</sup> Walla, K. (2023, March 20). China's opioid challenge: All is fair in law and war. Atlantic Council. <https://www.atlanticcouncil.org/content-series/hybrid-warfare-project/chinas-opioid-challenge-all-is-fair-in-law-and-war/>

<sup>3</sup> These pockets of expertise would be designed to stimulate industry and hone valued skills, technologies and techniques, advanced materials for example. The need was highlighted when the UK struggled to re-tool and re-skill as it resumed submarine manufacture after a hiatus. Hysteresis meant that, by the time the UK was ready to start cutting steel, many of the people with the required marine engineering skills had retired.

<sup>4</sup> <https://committees.parliament.uk/event/20204/formal-meeting-oral-evidence-session/>

<sup>5</sup> MSN. (n.d.).

<https://www.msn.com/en-gb/news/world/fbi-disrupts-hacking-network-linked-to-russian-intelligence-services/ar-BB1iIRnn>

<sup>6</sup> Tidy, B. J. (2023, April 14). Meet the hacker armies on Ukraine's cyber front line. BBC News. <https://www.bbc.com/news/technology-65250356>

<sup>7</sup> XPRIZE Foundation. (n.d.). XPRIZE. <https://www.xprize.org/>

<sup>8</sup> The Earthshot Prize. (2024, February 9). The Earthshot Prize: Urgent Optimism & Action to repair the planet. <https://earthshotprize.org/>

**Leverage External Investment.** The appetite for investment in Defence seems to be increasing with a number of new defence and security focused funds emerging<sup>9</sup>. However, like the MOD's own innovation landscape, the defence and security investment landscape is complex and fragmented. A fund of funds that brings together a number of interested investors may, enable the UK to deliver more ambitious projects and better help security related businesses scale.<sup>10</sup>

**Understand latent opportunities in the Industrial Base.** The UK's manufacturing capacity is significantly smaller now than it was in the run up to and during WWII. Even then, large segments of industry were turned to the war effort, the story of the Mosquito, being partially produced by the furniture industry, providing an excellent case study<sup>11</sup>. While it would probably not be publicly acceptable to start retooling the UK's job-shops just yet, conducting some research to find out where such opportunities lie for modern technologies might be prudent.

**Transform What we buy.** Uncrewed vehicles are proving to be decisive on the battlefield in Ukraine and the Red Sea and innovation is happening here, perhaps, even faster than in AI. However, MOD capability lines and the defence industry have been slow to pick up on the demand signal. While advanced military equipment will continue to have an important role on the battlefield, we must urgently rebalance expenditure on exotic and expensive platforms with the industrial-scale production of cheap, numerous uncrewed and semi-autonomous systems<sup>12</sup>.

**Transform How we buy.** The existing rules and regulations are not fit for rapid, agile, procurement of military capabilities and must be overhauled. The goal must be a Defence procurement system that is able to rapidly start, stop and change projects as the demands of the environment change. This will require the combined efforts of the Treasury, MOD and industry but is vital<sup>13</sup>.

**Broaden Concepts and Doctrine to encompass National Resilience.** The UK must broaden its definition of warfare and acknowledge that it is under attack from multiple non-traditional directions. If the UK is not ready to take offensive action on these non-military fronts, it must at least understand them and defend itself. Much of military spending and effort is focussed on countering military might head on but we must also ensure that we are defending the critical aspects of our society across the whole spectrum of national resilience. The concept of national resilience has been embraced by the Imperial College Institute for Security Science and Technology (ISST<sup>14</sup>), their new Centre for Active

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<sup>9</sup> I don't have documented evidence and the assertion is made purely from anecdotal observation.

<sup>10</sup> Note: Although a number of Prime suppliers are establishing their own venture funds, they may be difficult to integrate into a government led fund-of-funds due to competition regulations.

<sup>11</sup> [de Havilland Mosquito \(aviatorsdatabase.com\)](https://aviatorsdatabase.com)

<sup>12</sup> Lawson, J. (2024, March 1). Putin is at war with the West. We must win the drones arms race. The Telegraph.

<https://www.telegraph.co.uk/news/2024/03/01/putin-is-at-war-west-we-must-win-the-drones-arms-race/>

<sup>13</sup> It is highly likely that the bureaucracy of control and accountability in the MODs financial and commercial system is costing more than it is saving.

<sup>14</sup> [Institute for Security Science and Technology | Imperial College London](https://www.imperial.ac.uk/institute-for-security-science-and-technology/)

Resilience (CARS<sup>15</sup>) and NATO's Defence Innovation Accelerator for the North Atlantic (DIANA<sup>16</sup>) which are worth exploring.

*"If you know the enemy and know yourself, you need not fear the result of a hundred battles. If you know yourself but not the enemy, for every victory gained you will also suffer a defeat. If you know neither the enemy nor yourself, you will succumb in every battle." — Sun Tzu.*

**Build on existing strengths.** Build on the expertise and excellence of UK Special Forces, the Nation's original asymmetric force.

**Invest in Skills.** We must invest in the skills that are going to keep us at the forefront. E.g.

- **Secure Over-the-Horizon Command and Control**<sup>17</sup>
- **Autonomous Systems**
- **Artificial Intelligence**<sup>18</sup>
- **Cyber**<sup>19</sup>
- **Space**
- **Quantum**
- **Fusion/Miniaturised Fusion**

**A new approach to combating disinformation.** The information age has produced tools perfectly suited to assist Russia's employment of 'Maskirovka'. Although these tools were largely developed in the West, Russia, and now China, Iran and North Korea, use them to exploit Western openness and adherence to balanced reporting. Today, with messages transferring informally and in near-real-time, a faster, more aggressive diplomatic cadence is required. Perhaps something more akin to Finland's War on Fake News<sup>20,21</sup>.

**Keep the moral high ground.** It could be argued that some of today's conflicts are, in part, the result of Western lapses of morality. So, it is vital that we avoid a race to the moral bottom.

Although our adversaries seem happy to use amorality to gain an ephemeral advantage, morality is a long-term asymmetric advantage. Humanity has an innate sense of right, wrong and what is good for the functioning of society<sup>22</sup>. By being seen to be moral, we can garner and maintain national and international public support. Morality need not be a

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<https://www.imperial.ac.uk/security-institute/research/centre-of-excellence-for-active-security-and-resilience-cars/>

<sup>16</sup> <https://diana.nato.int/>

<sup>17</sup> Secure over the horizon command and control of uncrewed vehicles has become strategically significant so we should incentivise academia, industry and startups to develop the required skills.

<sup>18</sup> When (not if) fully autonomous systems eventually become prevalent on the battlefield, command and control will diminish in importance, with artificial intelligence reducing the requirement to an information backlink, location, video stream etc. Therefore, we must also be investing in artificial intelligence.

<sup>19</sup> Security must be integral to our military and critical national infrastructure systems.

<sup>20</sup> Finland is winning the war on fake news. Other nations want the blueprint. (n.d.). CNN.

<https://edition.cnn.com/interactive/2019/05/europe/finland-fake-news-intl/>

<sup>21</sup> Hivert, A. (2022, June 15). Finland launches experiment on countering disinformation attacks. Le Monde.fr.

[https://www.lemonde.fr/en/international/article/2022/06/05/in-finland-democracies-have-been-organizing-their-response-to-hybrid-threats\\_5985716\\_4.html](https://www.lemonde.fr/en/international/article/2022/06/05/in-finland-democracies-have-been-organizing-their-response-to-hybrid-threats_5985716_4.html)

<sup>22</sup> Bregman, R. (2020). Humankind: A Hopeful History.

blocker to adopting technologies or techniques and if we invest correctly, it will be possible to be safe, humane and effective.

### **3. Conclusion**

The ubiquity of technology means that state and non-state actors alike now have unprecedented opportunities to seize advantage, on and off the battlefield. As the UK can no longer rely on might and wealth, we, like our adversaries, will have to tap into these opportunities to find creative ways to stay ahead.

Opportunities for asymmetric warfare are no longer limited to guerrilla tactics. This requires us to adopt a broader definition of warfare and to innovate across the full spectrum of national resilience. Whoever adapts fastest and most efficiently is likely to succeed in war and in the sphere of Great Power Competition.

The UK's incredible industrial and educational heritage provides us with an excellent base to build on and benefits from a rich history of discovering advantage from a starting point of weakness. There is every reason to believe that, if correctly employed and incentivised, the UK will be able to use its intellectual, industrial and military prowess to find a 21<sup>st</sup> century edge.

It is not the capabilities fielded on day-one that dictate the outcome of a conflict, it is the ability to identify and exploit asymmetric advantage that will ultimately decide the victor.

#### **Disclaimer**

This document was written without formal access to the MOD and security agencies and was compiled from open sources and personal experience. Consequently, the concerns raised and recommendations made here may already have been addressed or over taken by events. Further to that, events are moving so quickly that the material and reference here could be added to or replaced on an almost daily basis, which in itself, underlines the need for pace and agility.



## **Asymmetric Warfare**

### **1. Introduction**

All war is asymmetrical, continually in a state of imbalance, with evolutionary competition for advantage playing out until one side or other achieves a decisive victory. But the phrase 'Asymmetric Warfare' generally refers to capabilities and techniques that enable one party to gain advantage over the other, even when conventionally outmatched. These creative, often rudimentary, tools and techniques are most effectively applied when and where they are least expected and mean that victory does not always go to the militarily superior force<sup>23</sup>.

For 100s if not 1000s of years, developed nations have generally sought asymmetric advantage through ever more exotic technology. For most of that time, it was thought to be a safe bet, as the cost of technology was such that only the great powers could afford to buy effective capabilities. However, non-state actors found ways to counter the Western way of war. This has, in part being enabled by technology advances that have reduced the price point of military effect to that of a child's toy or mobile phone. This development now poses a significant challenge to our defence industrial base and the UK's ability to fight and win.

This paper explores what an incoming Government could do, within the constraints of budget and public accountability, to address the challenges and take the opportunities that this situation presents.

### **Background**

#### *What is Asymmetric Warfare?*

Asymmetric Warfare refers to unconventional strategies and tactics adopted when the military capabilities of belligerent powers are so different that they cannot make the same sorts of attacks on each other<sup>24</sup>. Recent historical examples include guerrilla warfare, terrorist tactics and suicide bombings. But the list has been expanded by contemporary considerations such as orchestrated disinformation, cyber attacks, technologically enabled economic warfare (cyber crime), public health (e.g. China's failure to stop the flow of fentanyl precursors into the United States<sup>25</sup>) and many other factors.

#### *Why is this important now?*

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<sup>23</sup> Consider America's defeat in Vietnam of the recent Allied withdrawal from Afghanistan.

<sup>24</sup> Sexton, E.. "asymmetrical warfare." Encyclopedia Britannica, November 30, 2023.

<https://www.britannica.com/topic/asymmetrical-warfare>.

<sup>25</sup> Walla, K. (2023, March 20). China's opioid challenge: All is fair in law and war. Atlantic Council.

<https://www.atlanticcouncil.org/content-series/hybrid-warfare-project/chinas-opioid-challenge-all-is-fair-in-law-and-war/>

The UK can no longer rely on economic power for advantage, so we need to imagine other ways to find superiority. Fortunately, the UK has a history of defeating financially or militarily superior foes. From Nelson's victory at Trafalgar (delivered by an early application of mission command<sup>26</sup>) and the formation of the SAS during WWII, the UK has repeatedly managed to find advantage where there was seemingly none. The information age and the reducing cost of technology provides us with an opportunity to find an affordable edge. It is now imperative that we understand these opportunities and invest in their assessment and exploitation to deliver the required skills and capabilities at a cost we can afford.

### **Contemporary Sources of Asymmetry**

**Wealth.** Money, and the freedom of action it provides, has been a source of military asymmetry since the dawn of conflict and of Western advantage for at least the last 100 years. And it is highly likely that access to resources will remain a major factor in the outcome of conflict for the foreseeable future. However, the UK is no longer financially dominant enough to be able to rely on resources alone. So, it is fortunate then that wealth, in and of itself, does not win wars. It is the way that resources are applied that gives one side or the other a decisive edge. The way that resources are deployed will have many influences including political will, training and education, infrastructure, social make up. But it is the way that resources are applied to technology and the skills that create it that will have the most influence on military capability and the Nation's ability to defend itself.

**Technology.** Until relatively recently, wealth and technology advantage in industry and on the battlefield, went hand in-glove. However, the information age and hyperscale manufacturing (largely based in China) has heralded a period of technological democracy. Capabilities that were once the preserve of Governments are now readily available to all. For example, a device with similar memory capacity and processing power to a modern, 2024, mobile phone would have cost around \$30m in 1984 and around \$1Bn at the time of the moon landings<sup>27</sup>. This collapse in the cost of computing has enabled the democratization of information and that, in turn, led to democratization in many other fields, e.g. chemistry, biology and manufacture.

Although companies will work hard to protect their intellectual property, there is now enough open-source information available for people to discover or figure out almost anything. Open-source communities build on this to develop software, create new designs and even design new forms of life<sup>28</sup>. These lowered barriers to entry have themselves accelerated technological advancement further still and led to life quality improvements for many. But as our reliance on technology has increased, so have the threats from its ubiquity.

**Cyber.** The most obvious is the threat of cyber attacks. While civil and military society now benefits greatly from an unprecedented ability to store, process and transport information, those systems we rely on cost almost nothing to attack. Although relatively recent investments mean that a major attack is likely to require significant proprietary knowledge and some sophistication, amateurs and criminals can, and do, steal data and cause harm.

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<sup>26</sup> Nelson is said to have announced on the eve of battle that *"in case Signals can neither be seen, nor perfectly understood, no captain can do very wrong if he places his ship alongside that of an enemy."* Mewett, R. (2017, February 14). The Emergence of Horatio Nelson: Lessons for Leaders. War on the Rocks. <https://warontherocks.com/2017/02/the-emergence-of-horatio-nelson-lessons-for-leaders/>

<sup>27</sup> Historical cost of computer memory and storage. (n.d.). Our World in Data. <https://ourworldindata.org/grapher/historical-cost-of-computer-memory-and-storage>

<sup>28</sup> Blain, L. (2016, January 22). Do-it-yourself CRISPR genome editing kits bring genetic engineering to your kitchen bench. New Atlas. <https://newatlas.com/home-crispr-gene-editing-kit/40362/>

This threat also poses an interesting Grey Zone, between state actors and amateurs<sup>29</sup>. This topic can be further researched through the myriad books and academic publications on the subject, but suffice to say, cyber war poses both an affordable opportunity for asymmetric advantage and an equal and opposite threat<sup>30</sup>.

**Uncrewed Vehicles (Drones).** Recent events in the Red Sea have shown that equipment costing a few \$000s can disrupt industries worth billions and effectively engage military capabilities 1000s of times more complex and expensive than themselves. The nature of warfare itself is being redefined by small drones, many originally conceived as hobbyist toys, on the frontlines in Ukraine and in the Red Sea. For the cost of one F35 (\$79.2M), a nation could acquire 100,000 FPV (first person view) kamikaze drones, each capable of taking out a small but hardened target, such as a tank or command post.

While these small, rudimentary devices are no substitute for the full capability suite that a fully armed F35 can bring to bear, they have changed the nature of battle in a similar way to which aircraft changed the First World War. For the first time in a protracted, high-intensity confrontation, numerous, low-cost uncrewed vehicles are playing a major role and influencing the outcome of strategically significant engagements.

Of course, it is worth caveating that the conflict in Ukraine is unusual in that neither side has committed significant Air Power. Ukraine, because its limited resources are not sufficient to provide air superiority across the vast front line. Russia, perhaps because of the threat posed by Ukraine's Western air defence systems, perhaps because it is holding back its airpower for a later confrontation, who knows. But what we can be sure of is that, if the full force of NATO's multilayered airpower was brought to bear against the forces that Russia currently has deployed in Ukraine, the nature of the conflict would be changed rapidly and dramatically. In this scenario, it is not clear what niche would remain for small, cheap uncrewed vehicles and devices.

Success on the battlefield has accelerated the integration of numerous uncrewed vehicles into national armouries. Even the most modern forces will, for the foreseeable future, be augmented by machines that could be built by anyone with a 3d printer and a laptop<sup>31</sup>. These devices offer us an opportunity to gain an asymmetric advantage over those that seek to do us harm. However, we must quickly and decisively bring our industrial, technological and academic skills to bear to capitalise on this as the same opportunity exists for state and non-state actors alike<sup>32</sup>.

**Dual Use Tech.** While the majority of military spending is confined to exotic, bespoke equipment, tools and technologies, over the past 10 years, opportunity for military

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<sup>29</sup> There is evidence that the Russian Secret Services, afraid of being caught in an obvious act of espionage, passed information vital for the hacking of US military systems to Julian Assange. This extra layer removed them on degree from suspicion when Assange came into possession of information that was previously thought to be safe from all but the most sophisticated and determined of state sponsored organizations. [After Arrest of Julian Assange, the Russian Mysteries Remain - The New York Times \(nytimes.com\)](https://www.nytimes.com/2017/07/28/us/politics/russian-secret-services-julian-assange.html)

<sup>30</sup> <https://www.ncsc.gov.uk/>

<sup>31</sup> Perrett, B. (2024, January 22). Small, cheap and numerous: a military revolution is upon us | The Strategist. The Strategist.

<https://www.aspistrategist.org.au/small-cheap-and-numerous-a-military-revolution-is-upon-us/>

<sup>32</sup> Lawson, J. (2024b, March 1). Putin is at war with the West. We must win the drones arms race. The Telegraph.

<https://www.telegraph.co.uk/news/2024/03/01/putin-is-at-war-west-we-must-win-the-drones-arms-race/>



asymmetry has developed from a growing ability to exploit dual-use technologies. These, often digital, tools are designed for civilian purposes but can also be exploited for military advantage. Examples would include tools for discovering customer sentiment from social media being deployed to track down nefarious actors, hobbyist drones being used for reconnaissance and spatial operating systems, used to create Massive Multiplayer Online gaming environments (MOGs) being developed for use in military planning.<sup>33</sup>

These technologies are essentially cheap R&D for the Defence Industrial Base. By forming relationships with university start-up incubators, accelerator programmes, the venture capital and private equity sectors, it is now possible for the MOD and Defence Primes to find and nurture those technologies that have, or may have, military utility in the near future. Facilities exist to enable this already exist, such as the Strategic Command jHub, NavyX and the Dorset Battle Lab. However, they currently sit at the disruptive edge of defence and, therefore, struggle to deliver large scale change or influence capital programmes. Increased focus, freedom and investment could make these fledgling initiatives a rich and affordable seam of asymmetry.

**Advanced Military Equipment.** While this paper largely considers novel or emergent opportunities for asymmetry, it would be churlish not to recognise that technologically advanced equipment delivers an advantage on the battlefield. This is being played out in Ukraine where systems like Patriot, NLAW and HIMARS are proving to be vastly superior to their Russian equivalents. So it is important that we keep investing in this advantage. However, battle will not be sustainable if we are forced to use expensive, complex, exotic weapons to defeat adversary machines that are exponentially cheaper, simpler and more numerous<sup>34</sup>. The challenge to balance spending such that we add the advantage of mass, cost and novelty that some of the technologies mentioned previously offer with more traditional spending. With much of the defence industrial base and budgets focussed on advanced equipment, a significant change of tack will be required.

**The Industrial Base.** As Russia's invasion of Ukraine has proven, resilience in the industrial base is vital to national survival during high intensity warfare. The ability of a nation to call upon its industry to produce what is needed and when is more than a question of volume. The breadth of latent skills and capabilities in the system, the nature and distribution of the supply chain will also both play a vital role<sup>35</sup>. In the UK, the defence industry has found it hard to maintain breadth of capability while volumes have been reducing. This has been mitigated through multinational collaborations which ensure that there is sufficient volume centralised in one region, to justify developing the necessary skill and setting up the tooling required for exotic new equipment. However, this system is unlikely to be optimal in rapidly changing high intensity conflict which favours speed and mass over quality.

One partial mitigation might be to support specific small projects with no direct military application. These pockets of expertise would be designed to stimulate industry and hone valued skills, technologies and techniques, advanced materials for example. The need was highlighted when the UK struggled to re-tool and re-skill as it resumed submarine

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<sup>33</sup> Skyral. (2023, September 26). Skyral. <https://skyral.com/>

<sup>34</sup> Perrett, B. (2024, January 22). Small, cheap and numerous: a military revolution is upon us | The Strategist. The Strategist.

<https://www.aspistrategist.org.au/small-cheap-and-numerous-a-military-revolution-is-upon-us/>

<sup>35</sup> It is worth noting that China enjoys an almost perfectly vertical supply chain, i.e. it can mine the raw materials and turn it into exquisite digital technology without relying on any third party. In the modern world, this is a clear asymmetric advantage.

manufacture after a hiatus. Hysteresis meant that, by the time the UK was ready to start cutting steel, many of the people with the required marine engineering skills had retired. The UK bought itself out of this situation by relying on its American allies; but we may not have had to if pockets of the required skills could have been maintained during the pause<sup>36</sup>. This idea has been considered with reference to fast jet design and manufacture. Of course, although such projects would not be military per se, they could be profitable. The concept could also be a useful tool in economic stimulus and levelling-up and may help the UK prepare to move to an industrial war footing in a way that is probably not possible today.

**Information.** Enabled by Technology, information warfare is a topic in its own right. Like it or not, Russia perceives itself to be at war with the West, and one of its key battlegrounds in that unconventional war is information<sup>37</sup>. Russia is very proud of its ability to lie and deceive and even has a name for it, 'maskirovka'<sup>38</sup>. It's proved to be an exceptionally effective tool, especially when pitted against the soft underbelly of the 'liberal West'. Consequently, nations including China, Russia and North Korea have developed sophisticated and coordinated disinformation campaigns.

These are extremely effective internally because of the closed and controllable nature of the information environment in those countries. But they also exploit the open and democratised nature of the information environment in the West to land their subversive messages. The disinformation that surrounded the Russian downing of MH17<sup>39</sup> and the Salisbury Poisonings<sup>40</sup> are good examples from the UK and the conflict in Ukraine is exposing more daily.

Because the West, at least the civilian population at large, does not yet perceive itself to be at war while our adversaries almost certainly do, we are particularly vulnerable to these kinds of attacks. Even shadows of doubt can lead to swings in public opinion that can undermine the Government's ability to act, drive policy change or in extremis, bring the administration down. While 6Div and 77Bgd have been created to counter this threat. Much more is needed.

An example of an affordable fight back is Bellingcat, 'The intelligence agency for the people'<sup>41</sup>. Although Bellingcat's founder, Eliot Higgins, is fiercely independent of Government and especially the military (as he does not want to lose the credibility that neutrality brings), his work has military utility. The level of intelligence investigation that his distributed, independent, largely volunteer army can bring to bear often outstrips that which is possible through Government agencies.

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<sup>36</sup> SCHANK, JOHN F., et al. "History of British Submarine Programs." Learning from Experience: Volume III: Lessons from the United Kingdom's Astute Submarine Program, RAND Corporation, 2011, pp. 5–18. JSTOR, <http://www.jstor.org/stable/10.7249/j.ctt3fgzx8.9>. Accessed 3 Mar. 2024.

<sup>37</sup> Shportilo, D. (2024, February 27). Russia's psyop "Maidan 3" to reach climax in March-May. Freedom. <https://uatv.ua/en/russia-s-psyop-maidan-3-to-reach-climax-in-march-may/>

<sup>38</sup> Psychology Today (2022, March 14). <https://www.psychologytoday.com/us/blog/political-animals-and-animal-spirits/202203/maskirovka-the-weaponizing-misinformation>

<sup>39</sup> Dickinson, P. (2020, July 22). Russia's MH17 web of lies looks set to unravel in court. Atlantic Council.

<https://www.atlanticcouncil.org/blogs/ukrainealert/russias-mh17-web-of-lies-continues-to-unravel/>

<sup>40</sup> Higgins, E. (2021, February 4). How Bellingcat uncovered Russia's secret network of assassins. WIRED UK. <https://www.wired.co.uk/article/russia-bellingcat-poison>

<sup>41</sup> <https://www.bellingcat.com/>

Bellingcat are unlikely to want to work with the Government overtly, but it may be possible to learn from what they do and copy their model of a distributed citizen army to counter enemy information asymmetry. The other side of this challenge is to be much more robust with our own information narrative. Perhaps because we are not technically at war, perhaps to protect the population from distress, Western narratives remain balanced and mild. Under normal circumstances this would be commendable, but we are currently under a coordinated and sustained attack from a determined enemy.

In order to fight back, the UK has to get better at identifying false narratives and enemy propaganda before it is repeated and amplified by the mainstream and social media. Some kind of technologically enabled national identification and warning system maybe required to alert the public and media outlets about verifiable propaganda, dis and misinformation. Such a system would have to be independent to ensure that it could not itself be corrupted but, if successful, it would help level the playing field against the current informational onslaught.

**Adaptability.** In any conflict lasting more than a few days, it generally isn't the military capability which opponents line up with that dictates the outcome, it is their ability to adapt. Leaning again on Russia's invasion of Ukraine, in the first few days of Russia's invasion, we saw Ukraine adapt incredibly quickly to a high-tech, mobile, guerrilla campaign that allowed them to destroy a vast armoured column that seemed almost certain to crush everything in its path and take Kyiv. Again, in the Kherson advance, Ukraine used guile, technology and extraordinary courage to push a force far superior in numbers back to the East Bank of the Dnieper. But the advantage they found was quickly negated by Russia's evolutionary response, digging in, building fortifications and building up a reserve that made events like the Kherson breakthrough less likely and more costly to the Ukrainians. Every action in war, unless decisive, will result in an adaptation in the opponent. This circle of adaption was famously captured by fighter pilot and military strategist John Boyd in his Observe, Orient, Decide Act or OODA Loop model<sup>42</sup>. The cycle that, he argued, you must go through faster than your opponents if you are to win.

This makes sense intuitively but is also backed up by the results of global conflicts across the world and the millennia. The ability to get ahead of your opponent is the very essence of asymmetry. That being the case, it is odd that, while the OODA loop is taught in military academies across the globe, very few, if any, militaries measure their adaptiveness in terms of strategy, tactics or capability procurement.

**Procurement.** The way military equipment is procured in the UK is designed to protect the public purse from unexpected losses from expensive and incredibly complex programmes required to acquire a capital ship or fleet of new fast jets. While the system, does have some merits for capital equipment programmes, it is wholly unsuited to rapid adaptation and the acquisition of new, cheap, numerous and dual use capabilities. The contemporary capability programme needs a separate 'fast track' that is funded and capable of reacting to the need for adaptation 'at the speed of relevance'<sup>43</sup>. Currently, one of the barriers to adaptability is that it is almost impossible to stop a military capability programme once it is up and running. To make new capabilities affordable, disruptive new entries to the programme need the power to kill off or reduce programmes that have been rendered obsolescent, less relevant or of lower priority.

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<sup>42</sup> Osinga, F. P. B. (2007). Science, strategy and war: The Strategic Theory of John Boyd. Taylor & Francis.

<sup>43</sup>Mattis (2018)

<https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>

There has been some progress over recent years, with the establishment of military innovation hubs and programmes like Defence Digital's CommercialX<sup>44</sup>, and Defence Equipment and Support (DE&S)'s new strategy<sup>45</sup>, which seek to drive changes in commercial process and behaviours to accelerate the pace of change. However, Defence is currently still way too slow and cumbersome to cope with sustained warfare. If this is to change, adaptability must be considered as a military capability in and of itself and taught, trained and measured as such.

Related to this is Defence's ability to contract with smaller businesses of the type that are generating the Dual Use Technologies mentioned earlier. Currently, this is still far too hard and opaque for many start-ups and SMEs. The topic is worthy of a paper in its own right so it is not discussed at length here. However, factors that would make it much easier for smaller businesses to contract with the MOD include:

- Removing annualization of MOD funding (current programmes are funded annually which causes huge complexity and wastes vast amount of resource at the start and end of each year as project managers struggle with under and overspends)
- Reducing the time to contract, small businesses sometimes cannot survive long enough to wait for MOD contracts so they focus elsewhere, potentially denying the MOD a capability.
- Simplifying commercial rules, regulations and processes for smaller businesses/purchases.

**Innovation.** One of the key factors that drive adaptability is the ability to innovate. Separate from 'invention' innovation is the ability to find new ways to exploit or combine technologies and techniques to deliver advantage. Although numerous innovation hubs have sprung up across the Defence and security landscape, and delivered successes on the battlefield, their impact has been limited. These units are still, generally, operating at the fringes of the capability acquisition process, separated from lines of funding and resources required for integration of new technologies at scale. More broadly the UK innovation landscape is a complex and disparate mix of government initiatives and private enterprises. While the MOD, over the last 8 years, has begun to engage in this ecosystem, there is still space for the efficiency and effectiveness of the interaction to improve. This is another extensive topic that deserves a paper of its own.

**Morality.** It is impossible not to be appalled by Russia's recent behaviour in conflict. From Chechnya to Syria and into Ukraine, their barbarity is so extreme, most people seem not to comprehend the incredible, needless suffering they inflict on their adversaries. E.g. through the use of chemical and phosphorus weapons, on the populations they encounter, through rape, torture and looting and on their own troops, through their apparent disregard for their lives. Sadly, we also must acknowledge that the Russian way of war does provide them a form of asymmetric advantage. With less care for their troops, or the damage they cause, Russian's can conduct acts that professional Western military armies would not contemplate. These extra strings in Russia's bow are a vile but real advantage that we cannot, and would not wish to, counter like for like. The only effective way to counter barbarity is through victory achieved by more compassionate means and by seeing that justice is done.

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<sup>44</sup> Ministry of Defence Commercial - Commercial x. (2023, August 15). GOV.UK. <https://www.gov.uk/guidance/ministry-of-defence-commercial-commercial-x>

<sup>45</sup> Administrator. (2023, September 12). Introducing the DE&S strategy. Defence Equipment & Support. <https://des.mod.uk/introducing-the-des-strategy/>

**Artificially Intelligent Systems.** Technology brings new facets to the moral debate. While there are real concerns about the use of autonomous vehicles and artificially intelligent machines on the battlefield, and to what extent we need human decision makers in the loop, we must also acknowledge that our adversaries may not be so cautious. If our adversaries were to field fully autonomous combat air systems, for example, they would be far superior to their crewed alternatives. Lighter, higher power to weight ratio, able to carry more stores, sustain more g, unflinching artificially intelligent pilots etc. They would, therefore, be almost invincible when faced with human crewed vehicles. Even conventional aircraft piloted by artificial intelligence have proved to be so<sup>46</sup>. There will come a point at which we will have to ask ourselves, not whether it is moral to send autonomous vehicles into battle, but whether it is morally acceptable to send human crews to almost certain death. It may not be possible to solve this problem by avoiding artificial intelligence completely, but we can take steps to ensure that the tools we deploy are as safe and as humane as possible.

**Concepts and Doctrine.** To date, the UK has taken a fairly traditional view of military capability and the definition of what constitutes war and conflict. This is generally also true of most of our allies. Although we have recently added Cyber and Space to our list of stated military forces, we still harbour a far narrower understanding of what conflict is than our rivals. Russia, for example, is reported to follow the 'Gerasimov Doctrine' and China the 'Qiao/Wang' concept of 'Unrestricted Warfare'. Both these ideas encompass Military, e.g. conventional forces and nuclear weapons, Trans-military, e.g. diplomacy and guerrilla warfare and Non-military e.g. financial, resources or smuggling, capabilities. This all-encompassing view of war is perhaps better described as 'Liminal Warfare', a term coined by David Kilcullen who covers the topic in depth in his excellent work 'The Dragons and the Snakes.'<sup>47</sup>

This is important because it doesn't matter how well you innovate and adapt if you are fighting the wrong war, or perhaps not aware that you are under attack at all<sup>48</sup>. An enemy with a broader perspective has, by default, a broader range of options for surprise. While the UK might not wish to declare the environment to be a legitimate military target, or launch a new opium war, we must acknowledge that we have adversaries who are willing to do so. Broad threats that exist below the threshold of war challenge 'national resilience' and require a governmental response beyond the remit of the MOD.

*"Acting like Putin's first move on NATO will be tanks across the border is a strawman. His war on NATO started long ago and his tactics haven't changed. Weaponize the liberties of the free world against it using the media, political corruption, election interference, refugees."* **Gary Kasparov, Feb 2024**

**Special Forces.** Special forces were specifically conceived to provide an unfair advantage. As any incoming Government will quickly learn, the UK has a specific asymmetric capability to rival most, if not all, of its peer adversaries in its special forces. Their freedom of operation, tenacity and guile can be brought to bear to deliver or enhance almost any aspect of asymmetry. This is not the place, and the author is not qualified to discuss their specific capabilities or the opportunities they may provide. It is worth noting, however, that our

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<sup>46</sup> Martin, A. (2020, August 22). AI system beats US military pilot in F-16 dogfight. Sky News. <https://news.sky.com/story/ai-system-beats-us-military-pilot-in-f-16-dogfight-12053815>

<sup>47</sup> Kilcullen, D. (2020). The Dragon and the Snakes: How the Rest Learned to Fight the West. Pages 150 and 206.

<sup>48</sup> For example, there is mounting evidence that the UK has been the victim of a multipronged attack by Russia, designed to undermine our political system and elements of our society for the best part of 20 years. [Russia report: UK 'badly underestimated' threat, says committee - BBC News](#)

adversaries have also invested in non-conventional forces and are, perhaps, more brazen about how they use them.

**Little Green Men.** Russia's 'Little Green Men, in Crimea and Eastern Ukraine in 2014 for example. These troops, many of whom were members of the secret services rather than traditional troops, dressed in civilian clothing and makeshift uniforms to pretend to be a local uprising. Their slight of hand excused Putin's annexation of those regions and set the scene for his renewed invasion in 2022<sup>49</sup>. This is an example of how audacity combined with military capability provided Russia with an asymmetric advantage that the West was unable or unwilling to counter.

### **The Risk**

Britain no longer wields a significant asymmetric advantage in wealth or power. Our adversaries have learned our weaknesses and are able to circumvent expensive, complex military capabilities to attack effectively on the battlefield and on 'liminal' fronts. State and non-state actors have found asymmetric advantage in ubiquitous technologies that can be quickly and cheaply put to use against us. There is a risk that if we do not adapt quickly and efficiently, as our adversaries have done, the UK will be defeated militarily, socially and politically and forced into compromise.

### **The Opportunity (Recommendations)**

While the challenge is great, one strength that we still have is our academic, engineering and technological prowess. If the UK can tap into this resource, we will be able to get and stay ahead. We must use our skill and guile to discover and exploit sources or competitive edge beyond the battlefield.

**Experimentation.** Establishing small scale projects that keep the UK at the leading edge of key technologies, materials, additive manufacture, uncrewed vehicles, artificial intelligence etc.

**Leverage the 'Citizen Army'.** While military recruitment is proving to be fiendishly difficult,<sup>50</sup> the UK could better encourage and support its citizen army, to conduct operations in the national interest in areas such as cyber and information; as Russia<sup>51</sup> and Ukraine<sup>52</sup> have already done. For the UK to achieve the same would require some careful moral and safety considerations but could be highly effective if managed correctly. Prize giving and incentives, e.g. the XPrize Foundation<sup>53</sup> and Earthshot Prize<sup>54</sup>, could play a part in this by stimulating the required activity without the need for formal contracts and programmes.

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<sup>49</sup> How, why, and when Russia will deploy Little Green Men – and why the US cannot - Foreign Policy Research Institute. (n.d.). Foreign Policy Research Institute. <https://www.fpri.org/article/2016/03/how-why-and-when-russia-will-deploy-little-green-men-and-why-th-e-us-cannot/>

<sup>50</sup> <https://committees.parliament.uk/event/20204/formal-meeting-oral-evidence-session/>

<sup>51</sup> MSN. (n.d.).

<https://www.msn.com/en-gb/news/world/fbi-disrupts-hacking-network-linked-to-russian-intelligence-services/ar-BB1iIRnn>

<sup>52</sup> Tidy, B. J. (2023, April 14). Meet the hacker armies on Ukraine's cyber front line. BBC News.

<https://www.bbc.com/news/technology-65250356>

<sup>53</sup> XPRIZE Foundation. (n.d.). XPRIZE. <https://www.xprize.org/>

<sup>54</sup> The Earthshot Prize. (2024, February 9). The Earthshot Prize: Urgent Optimism & Action to repair the planet. <https://earthshotprize.org/>



**Leverage External Investment.** The appetite for investment in Defence seems to be increasing with a number of new defence and security focused funds emerging<sup>55</sup>. However, like the MOD's own innovation landscape, the defence and security investment landscape is complex and fragmented. A fund of funds that brings together a number of interested investors may, enable the UK to deliver more ambitious projects and better help security related businesses scale.<sup>56</sup>

**Understand latent opportunities in the Industrial Base.** The UK's manufacturing capacity is significantly smaller now than it was in the run up to and during WWII. Even then, large segments of industry were turned to the war effort, the story of the Mosquito, being partially produced by the furniture industry, providing an excellent case study<sup>57</sup>. It may not be publicly acceptable to start retooling the UK's job-shops just yet, conducting some research to find out where such opportunities lie for modern technologies might be prudent.

**Transform What we buy.** While advanced military equipment will have a dominant place on the battlefield, we must balance expenditure to accommodate mass and pace by exploiting new uncrewed vehicle technologies and a broad range of novel, innovative capabilities<sup>58</sup>.

**Transform How we buy.** The existing rules and regulations are not fit for rapid, agile, procurement of military capabilities and must be overhauled. The goal must be a Defence procurement system that is able to rapidly start, stop and change projects as the demands of the environment change. This will require the combined efforts of the Treasury, MOD and industry but is vital.

**Broaden Concepts and Doctrine to encompass National Resilience.** The UK must broaden its definition of warfare and acknowledge that it is under attack from multiple non-traditional directions. If the UK is not ready to take offensive action on these non-military fronts, it must at least understand them and make the public aware of the threat so that they are able to take a defensive posture.

*"If you know the enemy and know yourself, you need not fear the result of a hundred battles. If you know yourself but not the enemy, for every victory gained you will also suffer a defeat. If you know neither the enemy nor yourself, you will succumb in every battle." — Sun Tzu.*

Much of military spending and effort is focussed on countering opposition military might head on. However, rather than investing in ever more exotic armaments to exploit the weaknesses of a specific piece of military hardware, we should also make the seeking of our adversaries' weaknesses, in the broadest sense, part of our doctrine and build novel ways of exploiting them into our strategies and tactics. Creatively identifying ways to exploit the enemy's weaknesses must become second nature to our military personnel and the civilians that support them in government and industry.

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<sup>55</sup> I don't have documented evidence and the assertion is made purely from anecdotal observation.

<sup>56</sup> Note: Although a number of Prime suppliers are establishing their own venture funds, they may be difficult to integrate into a government led fund-of-funds due to competition regulations.

<sup>57</sup> [de Havilland Mosquito \(aviatorsdatabase.com\)](http://de Havilland Mosquito (aviatorsdatabase.com))

<sup>58</sup> Lawson, J. (2024, March 1). Putin is at war with the West. We must win the drones arms race. The Telegraph.

<https://www.telegraph.co.uk/news/2024/03/01/putin-is-at-war-west-we-must-win-the-drones-arms-race/>

The concept of national resilience has been embraced by the Imperial College Institute for Security Science and Technology (ISST<sup>59</sup>), their new Centre for Active Resilience (CARS<sup>60</sup>) and NATO's Defence Innovation Accelerator for the North Atlantic (DIANA<sup>61</sup>) and are worth exploring.

**Focus on core skills.** Build on the expertise and excellence of UK Special Forces, the Nation's original asymmetric force.

**A new diplomatic approach.** The information age has produced tools perfectly suited to assist Russia's employment of 'Maskirovka'. Although these tools were largely developed in the West, Russia, and now China, Iran and North Korea, use them to exploit Western openness and adherence to balanced reporting. While we would not wish to follow these nefarious actors into a strategy of lies and disinformation, we could take a much stronger diplomatic approach to calling out such behaviour. Currently, UK diplomacy seems measured, and aligned to a slower time when national statements would resonate for weeks. Today, with messages transferring informally and in near-real-time, a different cadence is required. Perhaps something more akin to Finland's War on Fake News<sup>62,63</sup>.

**Keep the moral high ground.** It could be argued that some of today's conflicts are, in part, the result of Western lapses of morality. So, it is vital that we avoid a race to the moral bottom.

Although amorality can be used to gain an ephemeral advantage, morality is a long-term asymmetric advantage. Humanity has an innate sense of right, wrong and what is good for the functioning of society. According to Rutger Bregman, a leading academic in this space, it is this trait that has enabled us to climb out of the trees and build civilisation<sup>64</sup>. By being moral, we can garner and maintain the public support which is vital for the creation of advantage. Morality need not be a blocker to adopting technologies and techniques that give an edge, and if we invest correctly, it will be possible to be safe, humane and effective.

## Conclusion

The price and ubiquity of technology means that state and non-state actors alike now have unprecedented opportunities to seize advantage. As the UK can no longer rely solely on might and wealth, we, like our adversaries, will have to tap into these opportunities to find creative ways to stay ahead. This will require us to take on a broader definition of warfare and national resilience that encompasses all elements of state and non-state competition.

Opportunities for asymmetric warfare are no longer limited to guerrilla tactics. Modern and emerging technologies offer risk and opportunity in equal measure. Numerous examples from recent history have shown how cheaply and easily contemporary technologies and

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<sup>59</sup> [Institute for Security Science and Technology | Imperial College London](https://www.imperial.ac.uk/security-institute/research/centre-of-excellence-for-active-security-and-resilience-cars/)

<sup>60</sup>

<https://www.imperial.ac.uk/security-institute/research/centre-of-excellence-for-active-security-and-resilience-cars/>

<sup>61</sup> <https://diana.nato.int/>

<sup>62</sup> Finland is winning the war on fake news. Other nations want the blueprint. (n.d.). CNN.

<https://edition.cnn.com/interactive/2019/05/europe/finland-fake-news-intl/>

<sup>63</sup> Hivert, A. (2022, June 15). Finland launches experiment on countering disinformation attacks. Le Monde.fr.

[https://www.lemonde.fr/en/international/article/2022/06/05/in-finland-democracies-have-been-organizing-their-response-to-hybrid-threats\\_5985716\\_4.html](https://www.lemonde.fr/en/international/article/2022/06/05/in-finland-democracies-have-been-organizing-their-response-to-hybrid-threats_5985716_4.html)

<sup>64</sup> Bregman, R. (2020). Humankind: A Hopeful History.

techniques can be used for strategic effect. Whoever masters the ability to harness, employ, change or discard and find the next advantage fastest and most efficiently is likely to succeed on the battlefield.

The UK's incredible industrial and educational heritage provides us with an excellent base to build on and benefits from a rich history of discovering advantage from a starting point of weakness. There is every reason to believe that, if correctly employed and incentivised, the UK will be able to use its intellectual, industrial and military prowess to find a 21<sup>st</sup> century edge.

It is not the capabilities fielded on day one that dictate the outcome of a conflict, it is the ability of one adversary to adapt and exploit an asymmetric advantage that will ultimately decide the victor.

### **Disclaimer**

This document was written without formal access to the MOD and security agencies and was compiled from open sources and personal experience. Consequently, the concerns raised and recommendations made here may already have been addressed or over taken by events. Further to that, events are moving so quickly that the material and reference here could be added to or replaced on an almost daily basis, which in itself, underlines the need for pace and agility.

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