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From blitzkrieg to blitzscaling: Assessing the impact of venture capital dynamics on military norms

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Abstract

Venture capital (VC) has recently emerged as a powerful new actor in the military domain. In the USA, VC investment in defence startups doubled between 2019 and 2022. A similar trend is noticeable in Europe, where billions are funnelled into AI-drone startup companies, spurred by escalating conflicts around the globe. VC investment is a ‘high-risk-high-reward’ way of financing military technologies, which requires fast-paced exponential growth at scale (‘blitzscaling’) and the disruption of existing markets. But with disruption comes debris. What happens when military organisations, which must navigate ethical questions pertaining to life and death, become shaped in the image of Silicon Valley and VC funding? This paper argues that the VC sector exerts a significant influence not only on military procurement processes but also on the direction of military operations and practices. This, in turn, has potentially significant effects on the communities and stakeholders affected by military operations, including those caught in the crosshairs of VC-backed AI technologies.

Keywords: defence sector; military norms; military technology; silicon valley; venture capital

Introduction

We are in the midst of a military AI bonanza. At security and defence trade fairs, artificial intelligence (AI) is presented as the inevitable and indispensable technology that will, with little doubt, determine the future of a state and its military effectiveness. Not least since Putin declared in 2017 that those who dominate in AI will ‘be the ruler of the world’ (Vincent, 2017) has military AI garnered the attention of policymakers, military strategists, and technology companies with a keen eye for an opportunity. AI not only serves a pathway towards more autonomy and lethality for weapon systems but is also seen in defence and technology circles as the key to winning any future war. For a number of years now the credo within the US defence sphere has been: ‘the only way [...] to stay competitive in a new warfighting environment is to ensure that [the US] uses the most potent weapon available: technology, and more specifically software’ (Mulchandani and Shanahan, 2022: 19). This newly focused attention on AI is reflected in US military spending. Between 2022 and 2023, federal contracts for military AI have nearly tripled, with a potential increase in the value of these contracts by 1,200% (Larson et al., 2024). With defence budgets growing across the globe, the prospects for new military software-oriented startups to capture a share of an enormously lucrative market are better than ever. And where startups are active, venture capital (VC) is usually not far.

With its recent turn towards US military business and technologies, venture capital is, in many ways, coming back full circle to its roots. Modern military innovation, Silicon Valley, and venture capital all share original DNA. Early venture capital endeavours in the 1940s were motivated by ‘investing in and inventing solutions that would help soldiers perform better in battle’ (Vardan et al., 2020). With an early concentration of technology firms in Palo Alto emerging in the 1950s, venture capital increasingly invested in this region during this time, ‘owed much to the intersection of [...] direct and indirect benefits from universities, government military expenditure as a boost to high-tech, and a special legal, cultural, and physical climate’ (Nicholas, 2019: 184). Similarly, the digital landscape itself, as we know it today, has its roots in military visions and requisitions. Norbert Wiener’s innovations in communications theory were harnessed for military missile technology in the 1950s, the grandfathers of AI almost all worked on mid-century military projects, and, of course, the Internet itself began as a military project, then named ARPANET, fostered by Pentagon requirements. And for much of Silicon Valley’s early history, until the 1990s, the region’s biggest single employer was a prominent weapons company: Lockheed Missiles and Space, today known as Lockheed Martin (Gonzalez, 2024: 4). During the boom in commercial digital technologies in the 1990s and early 2000s, Silicon Valley and VCs turned their backs on defence projects and capitalised on outsized profits from the civilian use of Silicon Valley products. During this period, the defence market was considered mature and consolidated, dominated by a handful of key industry players, the so-called ‘primes’, who held a firm grip on the defence market and associated procurement processes.¹

This made VC investment in the defence sector unattractive for a good three decades, not least because the gains that could be made in a government environment were no match for the extraordinary gains VCs were able to make in the commercial realm. Moreover, investing in matters of war and conflict was, for many investors, too high of a moral risk and associated with too steep of a reputational cost, with investors ‘fearful of falling foul of environmental, social, and governance rules’ (Bradshaw and Pfeifer, 2024). These animosities began to fade in the mid-2010s through the confluence of a number of likely factors: the extraordinary yields from the first cycle of technology investments in the early 2000s needed new investment opportunities, the inclusion of more and more software products for defence infrastructures normalised the dual-use² aspect of emerging technologies and with advances made in software and hardware innovation, Silicon Valley companies had set their eyes on ‘overturning established industry structures’ (Andreessen, 2011), and the launch of a number of innovation-focused defence programmes in the United States facilitated the forging of much closer ties between the Pentagon and Silicon Valley specifically and between defence and the world of venture capital more broadly. Emboldened by the astounding financial possibilities of software-for-defence products, the VC sector has now once more rekindled its fraternity with the defence sector, but with an inverted hierarchy. It is not the government organisations that dictate the pace and requisitions for innovation, but rather, it is the technology industry and its associated financiers that seek to ‘reengineer [...] the Pentagon’s DNA for a new era’ (Smith and Ulevich, 2023).

In recent years, the market opportunities for VC funding in this sector have accelerated, reflected in what Deputy Defence Secretary Kathleen Hicks called a ‘surge in US defence tech focused startups, scale-ups and private and venture capital’ with ‘some 2,000 deals, investing 100 billion [US] dollars since 2021’ (Hicks, 2024). From 2019 to 2022, VC money injected into military technology startups in the United States alone more than doubled (Kinder, 2023), and since 2021, the defence technology startup sector has been injected with nearly US\$130 billion (MacColl, 2024). Significant actors in the VC defence space include government-affiliated organisations, like the Defence Innovation Experimental Unit (DIUx, now DIU), but also key players from the technology industry with

extraordinary financial power who are hedging their bets in the defence sector – among them Eric Schmidt (formerly Google), Peter Thiel (PayPal and Palantir), and Marc Andreessen (Netscape), and their respective VC firms. There are, of course, many others. The DIU, launched in 2015 by then-Defence Secretary Ash Carter with the aim to provide funding for small military startups (Gonzalez, 2024: 3) played a crucial role in changing the defence landscape to focus much more on software products. However, it is the private VC actors who have now firmly set their eyes on shifting the defence finance ecology in their interest and who are accelerating the advancements VC financing makes in the defence space, prompting some of the defence primes to start up their own VC funds, such as Lockheed Martin Ventures and RTX Ventures (Gonzalez, 2024: 18).

VC adheres to a different logic than other financial instruments in the defence sector. The aim for VC firms is to make extraordinary returns for investors within a 10-year window, by betting on a high-risk, high-reward strategy and they do so by investing in companies that do not yet have an established market position but have high-growth potential. VC funders often take a hands-on approach to their investees, and once VCs have identified potentially high-growth startups, they must ‘back them with every resource’ to achieve the desired success (Thiel and Masters, 2014: 86). The primary product of the defence VC strategy is not a defence technology as such, but financial returns achieved through growth (Howard, 2024: 91). In short, the VC wager is one in which existing wealth is to be multiplied through the anticipation of significant growth, invigorated by a shallow Schumpeterianism – destruction with the anticipation of creating capital gains through growth at all costs (Kenney and Zysman, 2019: 43). *Anticipation* is the operative term here. VC aims are firmly rooted in future-oriented expectations of possibility, which they help force into being.

This affects the way VC firms manifest their interests in relation to both the startups and the markets. It incentivises startups to adopt a winner-takes-all mentality, which is often accompanied by overpromising and embracing risk, mistakes, and errors in the pursuit of scaling up rapidly. Moreover, in order to realise VC interests, a targeted market must align with their timelines and propositions or else be made to align if it is not already so aligned. In other words, the old ways of defence must be disrupted in order to accommodate new players with more lofty ambitions. The disruption of any market does, however, come at a cost to many of its multiple stakeholders.

Since VCs have re-discovered the defence sector, discourses and practices about defence acquisition, defence regulation, the global threat landscape, and relevant defence technologies for future wars have begun to change. Increasingly, prominent visions for war and security come to mirror the logic and priorities of Silicon Valley industries and its products, and the defence VC sector is exerting significant influence to help shape defence in the image of Silicon Valley itself. By all accounts, this seems to bear fruit – in an event organised by Andreessen Horowitz, a prominent VC company investing in AI-enabled weapon systems, Deputy Defense Secretary Hicks conjures up one of Silicon Valley’s most iconic mottos in closing her *American Dynamism* keynote: ‘yes, moving fast and breaking things is necessary to win wars’ (Hicks, 2024) – the only thing that must never be broken is the law and the US Constitution.

In this article, I argue that the logic of VC funding and its specific financial aims exerts not only a significant power in shaping the companies and the products supported through VC funding but that this logic needs a market that accommodates the fundamental parameters of VC profit making and that this move bears significant challenges for a sector that deals with matters of life and death. VC interests enact their priorities through a mix of lobbying, legislative tools, and mythmaking, which in turn moulds the defence sector to its needs. This mandate for structural and cultural change has consequences. In the context of defence, the cost of disruption is born not only by the businesses that traditionally dominate a market but by those communities and socio-political stakeholders

that are affected by the military and its practices, including those caught in the crosshairs of new, VC-backed technologies. In short, I argue that the influx of VC money in the defence sector shapes both military processes and military visions and these changes, while bearing financial fruit for investors, have potentially significant impacts on matters of peace and security. There is a substantial, and growing, literature on the relationship between VC logics and digitally shaped economies and the ensuing business practices (see, e.g. Langley and Leyshon, 2017; Cooman, 2024; Kampmann, 2024; Howard, 2024; Kenney and Zysman, 2019, among others), but, with a few exceptions (such as Gonzalez, 2024; Marshall, 2023; Brenes and Hartung, 2024), this dynamic remains underexplored in its effects on the military domain. This is what I turn my attention to here.

My focus is on the US defence market, although a similar effect can be observed in other geographical contexts. However, as the United States tends to set the trends and the pace for military innovation globally, it serves as a useful starting point. The article has four sections. I begin with a discussion of the logics underwriting VC gain, specifically the issue of growth. The next section discusses some of the recent, successful new military tech startups and their VC backers and analyses the discourses and practices they utilise in selling their wares to the defence sector. The third section explores the myths on which VC interests capitalise in the defence space. The fourth sector then examines the shift in defence priorities and visions for future warfare that increasingly mirror, or perform, in Langley and Leyshon's (2017) terms, both Silicon Valley and VC logics. I close with some critical observations about the impact this already had in reshaping military organisations and ideas of future warfare.

The VC growth imperative

At its most basic level, venture capital is what its name suggests: capital for new ventures. To fund a new venture, or startup, a venture capital firm gathers capital from institutional investors, such as pension funds, insurance companies, foundations, sovereign wealth funds, banks and other such entities, and/or from wealthy individual investors for a portfolio of companies that show promise, often technology companies. The investors act as 'limited partners' in this undertaking and receive a stake of equity in the company for their investments; those managing the VC fund are 'general partners' who annually receive 2–3% of the portfolio's value as a management fee, for the duration of the fund, and take between 20 and 30% of the gains made upon exit as carried interest.

The aim is for the startup to reach a sufficient level of credibility and size to become publicly traded through an IPO (Initial Public Offering) or become sufficiently attractive to be bought off by a larger corporation, which typically takes place within a period of 10–12 years. VCs do not deal in long-term investments, but they do deal in high-risk, high-reward opportunities. That means VCs take on the risk of a wager: a company with an excellent growth potential may be too risky for a bank loan, but with the right backing could yield outsized returns. This is where the VC steps in to bet on the success of the startup with the aim to profit from its exponential growth. The earlier the investment in a startup, the higher the risk, but also the greater the potential rewards. The risk VC investors accept is considerable. Only a fraction of VC-backed startups are successful in living up to their promise of hypergrowth and exceptionally high returns. The rest either fail or end in mediocrity. However, those that perform well do so by 'such an order of magnitude that the overall portfolio will generate returns that outperform equity markets over the same period' (Langley and Leyshon, 2017: 24). That is the incentive and is built into a VC portfolio, structurally and strategically. VC follows the 'power law' curve, where 6% of deals produce 60% of the returns (Tegler, 2023). Most VCs aim to achieve returns of between three and five times the investment, always hoping for more. Since not all the

firms in the portfolio will generate returns, the startups that fall within the 6% must grow exponentially in a short period of time to multiply the invested money by an order of magnitude larger than the average expected return, sometimes as high as 50 times or 100 times to make up for the losses. Importantly, the startup companies that scale up quickly in that market become further vehicles for VC exits as they are able to acquire other startups and thus contribute to a VC ecosystem for ongoing investment opportunities.

Startups are funded over a number of series, beginning with seed money, which often happens through government grants or startup incubator firms. Subsequent funding rounds take place at intervals between 12 and 18 months. At each of these intervals, the startup should have increased its valuation and be able to demonstrate continued potential for significant growth. The role of anticipated exponential growth is 'symptomatic of the willingness of venture capitalists and other private investors to continue to write "bigger checks" in further rounds of funding for existing companies which are encouraged to "spend to battle for market supremacy"' (Langley and Leyshon, 2017: 26). 'Growth at-all-costs' becomes the key aim, a logical upshot for the VC sector in which 'the product [...] is neither commodities, not profits, but *growth*' (Howard, 2024: 91, emphasis in original).

The role of unicorns – companies that are valued at US\$1 billion, or more – is therefore crucial for VC fund viability and attractiveness. The term unicorn itself is suggestive: it requires belief in the possibility of the rare, the extraordinary, and the exceptional. The term was coined in 2013, at a time when the originators of the term could identify just 39 of such companies in the VC environment (Lee, 2013). Today, this number has swelled considerably: at the time of writing, there are some 1,200 unicorns with a total cumulative valuation of just under US\$4 trillion (CBInsights, 2024), among them a growing number of defence companies. In the current climate of digital technology priorities, the sky is the proverbial limit for startup valuations. Whether the valuation of such magnitude is justified is often a matter of contestation.

To achieve extraordinary returns, scaling must happen at an accelerated rate – VC investor Reid Hoffmann has termed this 'blitzscaling' (Hoffmann and Yeh, 2018). In Hoffmann and Yeh's words, '[b]litzscaling isn't simply a matter of rapid growth. Every company is obsessed with growth [...] blitzscaling is prioritizing speed over efficiency in the face of uncertainty' (n.p.). This requires an appetite for increased risk, mistakes, and 'aggressively' investing in the future. As the authors note, 'it also requires an environment that is willing to finance intelligent risk with both financial capital and human capital' that act 'like fuel and oxygen; you need both to propel the rocket skyward' (Hoffmann and Yeh, 2018). Blitzscaling is as much a technique, then, as it is an ethos and ideology to move fast and break some things while doing so.

In short, VC-backed startups need to grow fast and aggressively in order to outperform possible competition and keep the belief in success afloat. It is, in effect, a performance of Silicon Valley's 'move fast and break things' motto itself (Kenney and Zysman, 2019: 45). Kenney and Zysman outline the dynamics of the VC investment cycle concisely:

Fast-growing startups whose value in each investment increases allow their venture capital investors to mark-up the value on their books, facilitating the raising of new and even larger funds upon which they can charge their management fees of three percent of the capital raised. . . . The upshot of these dynamics is an every upward spiral of valuations, all of which will be vindicated if the startup can be sold to either the public or to other investors. Notice during this entire cycle that rather than making money, the [startup's] sole task is to capture market share driving competitor startups and/or incumbent from the market segment by undercutting them even as the aggressor loses money. (44)

The task for startups and VC, then, is to prioritise growth in valuation, not profits or indeed profitability of the company itself. It is a distinctly future-oriented logic in which the *anticipation* for outsized gains is a key factor and this anticipation may only tangentially be related to the company's product or its potential for profitability. The focus on growth, and the notion of 'blitzscaling', is a simple, but crucial point if we wish to make sense of the current landscape of AI hype in the defence domain as much as elsewhere. It allows us to better understand that unicorns don't simply happen, they are created with copious capital.

How to make a unicorn

To achieve this primary goal of growth-as-product, VCs exert a significant influence on the vectors that enable a startup to achieve the desired hypergrowth and the associated valuation within the VC funding cycle. In other words, in order to make optimal returns for investors, VCs must shape the environments within which their financial interests are situated (Peters, 2023), and with this, they come to 'define the rules of the game' (Cooiman, 2024: 592). This influence is exerted in a number of directions. As Franziska Cooiman writes, in order to implement the VC 'hypergrowth principle', VCs tend to analyse 'the technology, founding team, business model and market [. . .]' – and in all four areas the VC logic leaves an imprint' (592). First and foremost, a VC firm exerts structural power on the startup companies themselves (Cooiman 2024). This begins with the selection of the startup. Proven technologies and business models (platform models, for example) are often preferred; a team that 'will do anything for the success of the startup' (592) is fundamental; and often significant VC networks are leveraged to bring the startup to the desired level of promise. With this, VC firms act not only as capital providers but also as 'knowledge brokers' (Langley and Leyshon, 2017: 24) and 'gatekeepers' (Cooiman, 2024: 591) for their investees. One of the most effective and persistent myths is that of the startup as 'a plucky group of outcasts and misfits [that] comes together with a dream, ambition, courage and a particular set of skills – to build something new in the world, to build a product that will improve people's lives' (Andreessen and Horowitz, 2024). This is an outdated, yet still very potent, romanticism. It conjures up an exceptionalism on which the collective imaginary can pin its hope. The fact is that today's unicorns are often started by veteran founders or founders who already come with significant connections and networks. And they are often well versed in the logic of VC gains.

There is a much more closely entwined relationship between the VC and the startup, by which the VC shapes the investees' business along their logic. Langley and Leyshon (2017) identify this concretely in the context of platform business startups, which they argue 'perform' both the temporal structure and the portfolio structure of VC funds, mirroring the need to rapidly upscale, and do so by pursuing 'target dominance of their own niche market infrastructure at the expense of others who are therefore destined to 'fail' (24–25).

This hands-on relationship between the VC and the startup is only one aspect in the drive towards high valuations for high gains. Another target for influence is the market and its various actors and audiences (Elder-Vass, 2021). Once a credible and well-networked team is in place and the direction of the startup's product is set and a business model is envisioned, the respective market must also bend to the interests of the high-promise venture. How does one disrupt a market, especially one that is already saturated with major players, and make it pliable for a startup and its offerings?

The untested nature of startup companies' propositions makes an assessment of their value – their valuation – highly dynamic and essentially speculative. Valuations are assigned in relation to people's expectations about the company. They are projections based on a number of parameters, usually qualitative and quantitative factors – market

size, sales potential/current sales, management structure, and others – which come together in a convincing story about the current and future value of a company, and they often rest on ‘gut-feel’ grounded in social factors such as the level of competing investor interest and hype’, rather than ‘quantitative rigor’ (Howard, 2024: 95). The mechanisms that enable VCs to create valuations that support their goals is thus instrumental.

In the current technology-optimistic climate, VC valuations are often a matter of creating enthusiasm, if not frenzy, through performative symbolism and make-belief, and there are a number of aspects to this process. One of these is the grandiosity of the claim to novelty, revolution, and disruption – the drivers for creating hype. In order to attract continued funding, a startup company is incentivised to create a speculative buzz around its proposition ‘through a mix of articulated hyperbole and ‘fake it till you make it’ mentality’ (Kampmann, 2024: 46). The production and performance of hype is often amplified by a colourful and vocal ‘visionary’ startup founder who tends to occupy a prominent place in media discourses and market-relevant events. It is a particularly aggressive form of marketing, one that is bound to the temporal restrictions of VC fund timelines in producing growing belief in a startup and with that in producing growth. The current AI startup landscape in general is instructive here, in which discourse has consolidated around the notion of ‘inevitability’ of a future determined by AI technology. Where belief in the inevitability of progress with AI is cemented among relevant audiences, the perceived value of a company providing AI products to support this belief is already pre-established. The inevitability narrative is significant in creating the appearance of what Mark Howard (2024) calls a ‘future social necessity’.

VC interests capitalise on human desire and a ‘confused (in)ability to distinguish between want and needs’ (98), and with this a perceived lack is produced that creates space for the appearance of an unmet market need, which a VC portfolio company is then positioned to meet. The goal is not to merely add value, but to ‘manufactur[e] a value gap that can be served with a newly designated solution’ (Howard, 2024: 103) – the creation of a future necessity that previously did not exist, and on which the VC ecosystem can capitalise. The increased valuation of the new technology solution is simultaneously also a devaluation of the old ways. There are various modes of producing this new lack in the commercial space, whether that is through creating dependencies on digital infrastructures, through addictive interfaces, or through habit-forming conveniences or raising the spectre of crisis. The US data analysis company Palantir, for example, was able to accelerate its IPO by one year on account of the 2020 COVID pandemic, which saw its revenues soar by 50%. According to the company’s CTO, Shyam Sankar, Palantir was able to ‘start 83 new engagements with customers in the first three weeks of COVID without getting on a plane’ (Sankar quoted in Reuters, 2020). Palantir has also been betting big on the plausibility of a large-scale war. I will return to this in more detail below.

Vcs invest not merely in future possibility, but in future *plausibility*. The notion of plausibility has an affective elasticity which makes it useful for influencing audiences. In this, ‘[a]gain and again, the appeal is to inevitability’ (Howard, 2024: 99). This appeal works in tandem with other narratives to produce the appearance that a particular startup is uniquely positioned to fulfil a created lack, and thus a future need, driving startup growth in the process. And more often than not, the focus on this ostensible future social necessity will direct both attention and funding in a way that ‘effectively enables [the] realization’ of the social-necessity-as-potentiality a ‘fait accompli’, as Howard says (107–108fn17), in which the broader public has little choice but to be enrolled in having to consume tomorrow what VCs and their startups work to valorise today. These myth-driven narratives are terribly alluring, often against better judgement or reason. Kampmann (2024) illustrates this well in his case study of the now-defunct Babylon Health AI company, where the ‘story of how the ‘mystical force’ of progress in AI would ‘inevitably’ improve the [AI system] provided particularly influential among regulatory agencies [...]

which refrained from banning the roll out ... despite its publicly known severe limitations' (49). Neither reason nor reality is a strong enough safeguard against stoked desire or fear.

Aggressive marketing and hyperbolic narratives are crucial aspects in shaping markets and their audiences. In order to do so effectively for any specific market, VCs and by extension the startups, mobilise extensive networks of 'symbolic actors' (Elder-Vass, 2021: 11) that serve as allies in valorising the startup and its pursuits, whether that is government officials or other successful individuals and groups, who provide an air of authority and clout. By becoming affiliated with powerful symbolic actors, a startup with 'little or no history of profits can be rapidly elevated in the hierarchy of elevations' (Elder-Vass, 2021: 11). This, then, is a second pillar to shaping markets effectively: spending significant amounts of invested capital on building highly effective networks and on lobbying to influence legislation and create advantageous conditions for a startup's proposition. OpenAI, currently valued at US\$80 billion, for example, has a global affairs team of around 40 staff whose primary role is to lobby governments and influence legislation globally (Criddle and Espinoza, 2024). Uber spent an estimated annual amount of US\$90 million on lobbying before it went public in 2019 (Davies et al., 2022).

In short, in order to produce hypergrowth as a VC product, a powerful blend of mythmaking hyperbolic narratives, aggressive marketing strategies, alliances with powerful symbolic actors, heavy government lobbying, and wielding direct influence on legislation is mobilised in order to ultimately sell a fantasy of growth that enables increased valuations and with that increased capital gains. The more closely a market and its audiences 'perform' the myths and make-belief of the VCs' valorisations, and the more closely the structural features of the market fit within the Silicon Valley model, the more power VCs wield in pursuing their gains. All this must happen within the VC fund's timeline, which is why, in order to achieve the goal of producing unicorns with increased and outsized valuations at each funding round, each of these influence levers needs to be put in hyperdrive to yield the desired beliefs – and valuations – at the point of exit. This works particularly well within the Silicon Valley context. Recent research has shown that VC endeavours outside of Silicon Valley are much less successful. Silicon Valley, in contrast, 'has developed an ecosystem that churns out unicorns' (Rao, 2023), and VCs hope that this ecosystem can be emulated for similar profits in a number of other domains, including defence.

Disruption comes with debris and the hypergrowth at all cost ethos often leaves a detrimental wider social and political imprint. Funnelling vast amounts of capital into startups, which may, or may not, have sustainability, can lead to a wider misallocation of capital, undercutting of existing businesses that serve communities well, and the overall destruction of economic value – a 'drive toward disruption without social benefit' (Kenney and Zysman, 2019: 39). It can also lead to an erosion of labour law protections or disruptions of labour markets and, generally, to a stripping back of the possibility for plurality and actual innovation to flourish. The case of Uber is as well-known as it is emblematic. Uber went public at a valuation of US\$82.4 billion in 2019 (Davies, 2019), and despite making staggering billion-dollar losses until 2023 (Jolly and Wearden, 2024), early investors in the company would have made billions at the time of IPO exit (Davis and Wong, 2019). In its wake, Uber leaves the debris of an eroded taxi industry, various labour laws across the globe undermined, the possibility for taxi drivers to make a fair wage hampered, and the general shared social good in tatters.

It is difficult telling belief and strategy apart in the VC game. Most likely they are so deeply entwined in the pursuit of gains and wins that belief becomes strategy by default. Without making customers believe in the product, there is no multiple-series funding, and it becomes harder to make investors keep their faith. For a unicorn that sells mattresses or music services, the effects of the fantasy may not weigh particularly gravely on the social

fabric. Businesses adjust, society adjusts, and life goes on. But one could make the case that in industries that have a significant impact on society, such as transport, healthcare, or defence, these business practices generate social and political scars and leave considerable swathes of stakeholders worse off.

Disrupting defence

The global VC market, bolstered by the extraordinary gains made with digital technologies for civilian use in the past two decades, has become excited by the prospects of digital technologies in the military domain. With the US VC focus on commercial digital technology cooling in the past few years, the defence technology market has become a hot investment prospect, with top venture firms now investing significantly in defence-related technologies. This marks a notable shift from two decades of largely ignoring a market that was seen to be near impenetrable for the structure of VC products. The defence sector has a finite addressable market with low but predictable growth. It was considered mature, largely consolidated, and historically dominated by industrial heavyweights, and therefore not an obvious candidate for disruption. Gaining access to this market was complicated in particular by a government acquisition process that deals with prolonged timelines – sometimes decades – for contracts to come to fruition. In short, the structure and logic of the defence market inherently did not align with the temporal mandates of VC investing, which needs returns within a much shorter time frame and of greater magnitude. These broader structural impediments were paired with a discourse that portrayed investments in defence as ethically questionable and the profiteering off death and destruction as morally not defensible.

However, it was perhaps first and foremost simply a matter of maths that made the defence sector an unattractive target for VC money in the past. Recall that the expected returns for VC investors are around three to five times the amount invested on a conservative bet and between ten and fifteen times for the digital technology sector and that this return is generated through the extraordinary growth in valuation for a small percentage of the startups which exit through acquisition or through IPOs. Startups that make it to the public market are exceedingly rare – only approximately 1% of startup companies are able to go public, often that percentage turns out to be considerably lower even (Chapman, n.d.). The majority of returns are then achieved through acquisitions by larger, established firms. The higher the valuation of a startup, the greater its commercial viability and the associated exit returns upon acquisition. In the defence sector, however, valuations are traditionally less bloated than they are for the commercial digital technology sector, and this means that any startup that would be acquired by a defence prime would be acquired at a much lower valuation.

This drives up the need to blitzscale defence unicorns. As the VC literature notes, '[i]n most enterprise-fast businesses (software, for example), you can get a 10X or 15X exit on an [merger and acquisition] event. In defence that's rare. Normally it's a 1X or 2X', and 'if [the acquiring primes] pay more for a startup than the multiple they are valued at, they get punished by Wall Street' (Tegler, 2023). This means that the more common exit strategy through acquisition was traditionally not a lucrative channel for VC gains. So, any defence startup worth investing in would need to invest aggressively in large and fast growth (50–100 times) to become viable for an IPO and with that for outsized VC gains that match what is possible in the commercial digital sector. The landscape for military digital technology is, however, changing fast as some of the national security unicorns – Space X, Palantir, and Anduril, among others – begin to shape the defence landscape in the image of the VC sector. With more defence-oriented technology unicorns gaining significant scale, they have 'not only gained market-share but are now becoming acquisitive themselves' (Tegler, 2023)

and thus have begun to mould the market to the speed and scale required for attractive VC returns. In other words, there is a strong sense in the VC realm that, with the turn towards software-focused systems for militaries, there is now an opportunity for one of the new defence startups to become the new ‘Tesla’ in overtaking the primes in the market cap (Harris Williams, 2022).

Generally speaking, the defence sector is a highly attractive market. It is both well-funded and robust. If at all, defence budgets decline only marginally and more often than not, they tend to increase over time.³ Global spending in the defence domain has increased consistently now for nearly a decade and has been bolstered by the 2022 Russia–Ukraine war and its mandate for rethinking security globally, the war on Gaza, and ongoing tensions in Asia. Total global military expenditure reached a record US\$2,443 billion in 2023, with ‘the steepest year on year rise since 2009’ (Tian et al., 2024). The focus for defence spending is markedly on accelerating innovation. The US Department of Defense (DoD) has requested just under US\$850 billion for the 2025 budget, with a peak allocation of US\$148 billion for research, development, testing, and evaluation (Janes, 2024). Similarly, the European defence budget has increased from €142 million to €1.1 billion a year, with an emphasis on developing research in sensors, ‘smart weapons’, autonomous technology, swarm technology, and, of course, AI (Zorloni, 2024). To be sure, the defence primes continue to hold a firm grip on the sector: Lockheed Martin, RTX, Boeing, Northrup Grumman, and General Dynamics still divide the largest slices of total sales between them.⁴ However, the market is changing as digital technologies become a focal point for innovation in defence and a growing number of DoD flagship programmes are awarded to military tech startups.

Between 2019 and 2022, US VC investment in defence startups has doubled, from US\$16 billion to US\$33 billion (Kinder, 2023), with VC firms putting US\$35.8 billion in startups across 800 deals in 2022. Investments have since been developed to bear fruits towards exits. To this end, the Russia–Ukraine conflict and other global tensions have been instrumental in demonstrating to observers ‘that you can adopt technology and experiment at a much faster pace’ (Traverston, quoted in Bradshaw and Pfeifer, 2024). Emboldened by this, and the recent successes of SpaceX and Palantir, VC firms have invested approximately US\$125 billion in dual-use or specific defence startups. In the four years preceding this period, investment was only a fraction of that (Lipton, 2023b). There are a growing number of unicorns in this domain, the more stable ones are currently named in investor circles as the SHARPE cohort – Shield AI,⁵ HawkEye 360,⁶ Anduril Industries,⁷ Rebellion Defense,⁸ Palantir (although no longer a startup),⁹ and Epirus.¹⁰ Among these, Anduril is the ‘darling and poster child of the sector’ (Predin, 2023) and has recently won contracts with the US Army, the Air Force, and the US Navy and Marine Corps for its AI-powered systems. Together with Shield AI, which has also recently been able to secure US Air Force contracts for its AI-powered drones, the two unicorns are among the most prominent defence startups in terms of media coverage and PR reach, shaping the defence landscape towards extended AI-driven battlefield awareness technologies that promise ubiquitous transparency across all warfighting domains. As Palmer Luckey, CEO at Anduril, quips in an interview, ‘[f]ifty years from now the seas are going to be transparent. The skies are going to be transparent. We’re going to know where every sub is, every plane is’ (Luckey quoted in Economist, 2024). Anduril is currently seeking Series F funding of US\$1.5 billion at a valuation of US\$12.5 billion (Bradbury, 2024). Shield AI has most recently raised US\$200 million in Series F funding at a valuation of US\$2.7 billion. Anduril has backing from the most prominent VC companies investing in new defence products, including Founders Fund, Andreessen Horowitz, General Catalyst, and Lux Capital among others who are hoping to capitalise on the current conflict landscapes.¹¹

However, the levels of success defence-oriented VC firms and their startups anticipate requires a fundamental change in how the US government procures its defence products,

and the reimagining of the Pentagon's self-perception for the future. The emergence of the SHARPE cohort has helped create 'the network effects of a high-energy entrepreneurial ecosystem that helps all its sector participants' (Harris Williams, 2022). In order to capitalise on this and achieve the desired returns, a fundamental transformation of how budgets are deployed in the defence sector, and to whom, is required. Paving the way towards aligning VC interests with US government interests requires a significant scale of intervention into the market itself. Producing growth in a notoriously slow market when it comes to acquisition and procurement means initiating quite a substantive disruption. Different VC firms have different approaches to disrupting defence processes and practices, but the aim is the same: to 'infuse [the Pentagon's] clogged arteries with the nimble, agile DNA of Silicon Valley' (Shah and Kirchoff, 2024), so that VC timelines and the demand for quick growth can be better accommodated. There is a tightly knit interlacing of key actors in the most prominent of defence VC endeavours who have made significant forays into disrupting the defence sector and have shaped the perspectives the sector should prioritise.¹² The VC industry is not known for its transparency, however, some VC firms' activities are more prominently visible in this pursuit than others, and those companies – Founders Fund and Andreessen Horowitz among them – play a significant role in getting the Pentagon to buy Silicon Valley products, whatever it takes. In order to align US government processes with the speed and scale needed for extraordinary returns, VC entrepreneurs and their backers 'had to go to war', indeed, they 'had to hack the Pentagon itself – its archaic acquisition procedures, which prevent money moving at Silicon Valley speed' (Shah and Kirchoff, 2024). The motivation is clearly spelled out in Shah's and Kirchoff's (2024) account of building the current defence innovation ecosystem. Shah and Kirchoff are two of the founders of the US government-backed VC enterprise DIUx.¹³

In Silicon Valley, deals are done in days. The eighteen- to twenty-four-month process for finalizing contracts used by most of the Pentagon was a nonstarter. No CEO trying to book revenue before their next venture capital raise can wait for the earth to circle the sun twice. We needed a new way.

This new way, able to accommodate VC structures, logics, and interests, meant forcibly cracking open the structural limitations the sector had for VC money, primarily its attachments to the primes and the acquisition structures that made the market too protracted an environment for quick and significant gains.¹⁴

One way to do this is to forge a startup-friendly governmental environment by wielding intellectual influence on the market's customer: the government. Former Google CEO Eric Schmidt, for example, who holds a number of investments in various military-related ventures, including Rebellion Defense, has been forging close ties with the US Department of Defense since 2016 when he first chaired the US Defence Innovation Advisory Board (DIB), connecting the technology sector to the Pentagon. He then went on to chair the National Security Commission on AI (NSCAI), which produced a report in 2021 that urged all government institutions, including the US DoD to institute 'more agile acquisition, budget and oversight processes' in facilitating 'ubiquitous AI capabilities and new warfighting paradigms' (Schmidt et al., 2021: 11, 2). His view is evidently shaped by a 'Silicon Valley worldview where advances in software and A.I. are the keys to figuring out almost any issue' (Conger and Metz, 2020). In essence, this means reorienting the DoD's attention on speed and scale – the two cornerstones for VC growth. Schmidt is a key actor in directing the defence sector towards VC interests, and he is unusual in that he has a significant government network, and with that, he has outsized credibility and influence in the sector, despite his clearly vested interests. Schmidt had close ties with former Defence Secretary Ash Carter, who was a key driver in aligning the Pentagon with Silicon Valley and who installed Schmidt as Chair of the DIB (Alba, 2016); Schmidt also enlisted Henry

Kissinger in promoting an AI-focused defence future (see for example Kissinger et al., 2022). And, after Kissinger's death in 2023, Schmidt has forged an alliance with another high-profile figure, retired General and former chairman of the Joint Chiefs of Staff, Mark Milley (see, e.g. Milley and Schmidt, 2024).

Other defence VC investors have banded together and doubled down on Schmidt's message that defence is in need of overhaul, if not a revolution. In a June 2023 open letter to Defense Secretary Lloyd Austin, a consortium of 13 VC companies, including Lux Capital, General Catalyst, Founders Fund, Palantir Technologies, and Anduril Industries, made four strong recommendations to the government: to modernise the DoD, to strengthen the alignment of capital markets to DoD outcomes, to incentivise technology companies to do business with the DoD, and to establish a bridge fund for demonstrated technologies (Mitchell, 2023).

Increasingly, defence VC companies employ a sprawling and expansive network of former government staffers for lobbying purposes, mirroring a long-standing practice of exerting pressure on the defence sector by the primes (Marshall, 2023). Andreessen Horowitz alone spent US\$1 million in 2023, purely for lobbying activities (Edgerton and Chapman, 2024). In the US context, more than 50 former Pentagon officials are now employed by VC firms in various capacities, enticed by the allure of the sector and its outsized gains.¹⁵ These individuals typically use their standing to 'press the Pentagon to provide more funding for emerging technologies in general' (Lipton, 2023b), thus plying the field for a number of possible startup ventures. VC partners and their lobbyists are pushing their advocacy for an overhaul of defence at private dinner parties, cocktail parties, trade events, conferences, special trips, and any other occasion at which government officials can be subtly, or overtly, swayed towards VC interests. In addition, VC partners 'supply policy papers and practical guidance to the Pentagon and the broader US national security establishment about how to include more startups' (Marshall, 2023). These influencing campaigns are comprehensive and relentless, and in the past five years, this work is bearing fruit in shaping the self-perception of the defence sector as in need of becoming more like Silicon Valley and adjusting its practices accordingly. I will return to this point in the final section.

A third lever employed by VC firms to disrupt defence and broaden their access to available revenue in the sector is the law. Here, Peter Thiel and his ventures (SpaceX and Palantir) have set the example for disrupting defence by force of law. In 2014, SpaceX sued the US Air Force for allegedly improperly awarding multi-billion contracts for payload launch rockets through non-competitive bids. SpaceX dropped the lawsuit when the Air Force decided to open the bid to competition. The space startup has since been awarded several multi-million dollar contracts with the DoD, after threatening to sue on another occasion (Mitchell, 2016). More recently, in 2021, SpaceX has won a US\$1.8 billion contract to expand its work with US intelligence and defence agencies (Maidenberg and Fitzgerald, 2024). Another Thiel defence venture used litigious tactics to force the defence acquisition process towards reform. In 2016, Palantir sued the US Army, claiming that the solicitation process for the Distributed Common Ground System (DCGS) precluded Palantir from competing (Mitchell, 2016). The judge found in favour of the startup company and Palantir subsequently secured the US\$823 million DCGS contract. Like SpaceX, Palantir has since carved out a significant niche as a defence contractor and has won several multi-million-dollar contracts with the DoD, not least due to the legal challenges initiated. As the 2020 Palantir IPO filing states: 'Our victory in federal court is transforming the procurement of goods and services across the US federal government. For us, this shift in government acquisition represents a significant expansion of our TAM¹⁶ [...] We are working toward becoming the central operating system for all US defense programs' (Palantir, 2020: 159–160).

A considerable proportion of VC funding goes into breaking defence open for VC interests and its associated financial outcomes. In order to disrupt a market that was firmly entrenched in a close relationship with the primes, VC supported defence startups 'initially had to hire more lawyers and lobbyists than engineers' (Economist, 2024). To capture a foothold in, and access to a highly lucrative market, VC companies needed the DoD to change radically and accommodate their business structures and outlook; in short, they needed to create the environment in which the anticipation of outsized growth could manifest.

Military mythmaking

In a temporally bound VC environment, high valuations must be achieved relatively quickly. This process of valuation is, as Birch and Muniesa (2020: 6) highlight, shaped by 'social, discursive and material dimensions'. Paying attention to the social dynamics and discourses is worthwhile here. In order to fully capitalise on the initial structural investment, a 'value gap' needed to be manufactured (Howard, 2024: 103) and the company's specific services must be elevated to become a necessity. To do so, various narratives come into play. In the context of the new defence startups and their VC backers, these narrative themes revolve around interlinking strands of urgency, crisis, and patriotism. The first and most prominent story is that of an urgent need for acquisition reform because current structures and providers are archaic and the government's processes are too bureaucratically cumbersome. This narrative has been repeated so frequently across all defence VC investors and associated startups and across various media channels and events that it has become a contemporary ideology. The notion that 'excess bureaucracy is holding the US Army back from efficiency and technological development' (Murgai and Williams, 2017) is today commonplace in most media coverage of contemporary defence acquisition and reflects a relentless discourse that portrays the contemporary problem of war as primarily a matter of bureaucracy. As indicated earlier, it is a key story in changing access to the market and aligning timelines to VC interests.

The second, related, narrative is that the primes and their products are unfit for purpose and the wars of the future are won with digital innovation. An Anduril retrospective from 2023 is representative in telling the story that 'the ingenuity of incumbent defense primes had stagnated amid misaligned incentives and crippling bureaucratic procedures' (Anduril Industries, 2023). A recent Foreign Affairs op-ed by Eric Schmidt and Mark Milley, titled 'America Isn't Ready for the Wars of the Future', claims emphatically that America's 'jets, ships and tanks' are ill-equipped against an onslaught of cheap drones and that the Pentagon urgently 'needs new type of gear' (Schmidt, 2024). This storyline typically draws on the conflict in Ukraine to lend emphasis to the claim that the wars of the future are fought and won by mass (cheap, AI-enabled systems) attrition (swift and easily replaceable gear, such as first-person view drones) and the ability to have perfect information (via AI-enabled command and control programmes). In other words, the story is that with AI-powered weapons new defence startups like Anduril will have 'the ability to swiftly win any war we are forced to enter' (Luckey, quoted in Kinder, 2024). These are, of course, unverifiable claims. There is no evidence, to date, that victory is plausible primarily on account of AI, indeed such claims may be wholly implausible. This does, however, not matter. The narrative allows for an overextending of future-oriented promises for financial success, by positioning software-focused companies as intrinsically more valuable to the endeavour of future war than the hardware-focused apparatuses of traditional war, and for establishing the defence technology experts also as experts in how to win wars.

This ‘future wars’ discourse is often paired with a consecration of defence startup entrepreneurs, as ‘visionary founder[s]’ (Kampmann, 2024: 49) with exceptional insights and capabilities. Anuril’s CEO has been dubbed ‘Millennial slayer of US defense giants’ (Dean, 2024) and ‘Silicon Valley’s *Oppenheimer*’ (Kinder, 2024); Alex Karp, of Palantir, penned a *New York Times* op-ed titled ‘Our Oppenheimer Moment: The Creation of A.I. Weapons’ (Karp, 2023) and more recently, in 2024, suggest in a *Washington Post* op-ed that AI weapons ‘will eclipse atomic bombs’ (Karp and Zamiska, 2024). The bottom line of these stories is always the same: AI weapons will change geopolitics, democracies must be the first ones to develop them at scale, and once these weapons have been acquired or developed, they will promote peace and democracy because they will have enormous deterrent effects. Again, Anduril’s communication strategy illustrates this well. When pitching to potential investors, the company’s first slide states ‘Anduril is a company that will save Western civilization by saving taxpayers hundreds of billions of dollars a year as we make tens of billions of dollars a year’ (Luckey, quoted in Dean, 2024); the company more recently positions itself to ‘rebuild the arsenal of democracy’ (Anduril Industries, 2024). Similarly, Shield AI claims that ‘AI pilots will revolutionize battlefields and commercial aviation at scale’, their strapline is ‘the greatest victory requires no war’ (Shield, n.d.).

These statements are as exaggerated as they are effective. The claims put forward do not have to be coherent or true to be appealing to potential customers and investors. But, they have to tap into an affective aspect to become alluring. As highlighted earlier, the conjuring up of ‘inevitability’ and the production of AI fetish is a cornerstone of VC-funded Silicon Valley products and particularly in the context of AI-type technologies, FOMO (fear of missing out) plays an outsized role in getting investors on board and helping drive up the valuation of a startup (Howard, 2024: 106 fn3). It also works on the market dynamics more generally.

However, when security and global politics are at stake, FOMO comes to have a different, more existential inflection. This makes a further narrative that is often raised in the new defence VC context very potent: the story of an imminent war with another great power, typically China (and, to a lesser extent, Russia, and recently also Iran). In these discourses, China takes on the role of villain in a number of ways. It is raised as a dangerous competitor in military AI against which the United States must not fall behind. ‘China is Netflix, the US military is Blockbuster; China is Amazon, the United States is Barnes & Noble; China is Tesla, the United States is General Motors’, Shield AI co-founder Brandon Tseng writes (Tseng, 2021). Other reports see China as the greatest contemporary military threat, wielding ‘power in a way that political leaders in the West might never understand’ (Karp and Zamiska, 2024), and against which it behoves any responsible nation to arm itself appropriately.

Such sentiments repeat what the NSCAI report placed front and centre in its 2021 report: that China is an imminent and formidable threat to US competition – whether that means war or financial gains. The NSCAI report makes 604 mentions of China. The trope of ‘the China threat’ (Boyle, 2024)¹⁷ as a key foil to US success in AI is so deeply entrenched in this discourse that it drowns out any more moderate voices, or indeed research, which suggests that China may neither be as powerful nor as threatening (to the US) as it is made out to be (see, e.g. Bekkevold, 2023; Kosiak, 2023; Chang, 2023; Sawant, 2021).¹⁸ Add to this that China spends significantly less on its military than the United States (Hartung, 2023), and the invocation of China as an imminent risk becomes a potent but unsubstantiated narration of *plausible* crisis, bolstered by the Ukraine–Russia conflict and Israel’s war on Gaza and Lebanon.

This conjuring up of a possible crisis is key. By ‘valorizing crisis’ (Howard, 2024: 104), VC actors encourage shortened action timelines as it pertains to defence acquisitions. In order for this to work, VC firms don’t need the actual crisis to materialise in order to capitalise on it. Indeed, ‘VCs often already exited and profited by the time crisis decisions are made

(or not)', and because it is about the plausibility of crisis, not an actual crisis, 'they can profit regardless of whether the crisis occurs at all' (Howard, 2024: 104). A crisis narrative simply needs to be plausible and potent enough for potential customers (and investors) to act on the narrated possible future and its relevant products. That is, however, not to say that VC interests don't benefit from actual crisis events. The war in Ukraine has been a fertile ground for military technology startups to place (and prototype) AI-enabled combat drones in actual contexts of conflict, so much so that Eric Schmidt is financing a number of drone startups and accelerators in Ukraine (Emerson and Nieva, 2024).

Warfare is unlike a consumer business in that desires for a new product, especially one that aids in the act of killing, must be robustly justified. The above narratives create a myth of warfare as technologically solvable, cutting-edge, heroic, different, and knowable only to those who make the products to fight future wars. In the wider context of the history of warfare and geopolitics, such claims are outrageous and wildly exaggerated and the promises made are bordering on fantasy. But, it is in this mode of overpromising that the valorisation and consecration of Silicon Valley products are most effective. This is not to say that the narratives and proposed utility of the technologies are entirely false, implausible or fraudulent. Whether they are or not cannot be known: it is, at this point, unverifiable in most contexts. Some of it might be true or come to pass, some might not. What they do have in common is that they are speculative and future-oriented, and it is precisely that quality that gives them their utility in bolstering growing valuations for startups.

The new VC-backed defence unicorns are created by influencing key government institutions; weaponizing legal processes to crack open procurement processes; employing an army of lobbyists and government-relations professionals to gain access to and influence in government; making plausible but speculative promises of flawlessly functioning military and surveillance technologies; inflating affective notions of patriotism, sacrifice, victory, and success; and stoking the potential for rivalry and conflict with China.¹⁹ These narratives and stories are as ubiquitous as they are effective in creating a new future necessity for defence organisations and it seems that VC efforts towards creating an ecosystem for more ventures have now begun to pay off.

Defence 2.0

As Shana Marshall (2023) observes, 'the fingerprints of VC priorities are everywhere' and the goalposts for accommodating VC interests, to the detriment of oversight, are shifting quickly in government institutions as the language of VC imperatives finds its way firmly into government and military practice discourse. The US Army has installed a programme, the '10X Platoon', which reproduces the growth mandate of the VC sector with the goal to 'see further, shoot further and make better decisions 10 times faster than before, thanks to unmanned sensors, robots, networks and AI systems' (Freedberg, 2021). There are notable shifts also towards what Marijn Hoijtink calls 'Prototype Warfare', which foregrounds a mode of experimentation that favours 'a more speculative and entrepreneurial vision of experimentation (dominant within the surroundings of Silicon Valley) that is about acting fast, taking risks and accepting, or adapting to failure' (Hoijtink, 2022: 328). A 2022 DoD Prototyping Guidebook illustrates this shift. The report reiterates the trope of an antiquated and glacial DoD innovation process: 'to address the challenges, the DoD has adopted a risk-tolerant approach to capability development through the extensive use of prototyping and experimentation' (US DoD, 2022: 1). DoD Prototyping embraces a 'fail fast, fail cheap to learn fast and save money' (3) ethos, familiar from the technology startup environment.

The imprint of the VC sector and its rhetoric is also visible in other new programmes, including the Pentagon's 'Replicator' initiative, which incorporates both the timelines for VC aims and the products Silicon Valley military startups have to offer. The Replicator scheme aims to acquire multiple thousands of small, autonomous drones and to do so fast 'within 18–24 months' (Gordon and Tirpak, 2023: n.p.). The systems in question are 'attractable, autonomous systems in all domains, which are less expensive, put fewer people in the line of fire and can be changed, updated, or improved with substantially shorter lead times' (Hicks, quoted in Gordon and Tirpak, 2023). This ensures a pipeline of repeat custom for systems that startups like Anduril, for example, make. Prioritised here is, once again, speed and scale in producing all-domain-autonomous systems, which foster the hope that systems like these will 'let us think and act differently' (Hicks, quoted in Gordon, 2023). As these systems function across domains, the need for an AI infrastructure – a platform to facilitate the flow of data – becomes obvious. Here, the US DoD Join-All-Domain Command and Control programme (JADC2) is also illustrative of a Silicon Valley idea informing defence practice. JADC2 is a comprehensive initiative 'to connect sensors from all military services [...] into a single network' in an effort to modernise control and command structures and make them more compatible with the increased flow of data produced in the military domain. The goal is to create a platform model for military purposes, for which the 'DoD uses ride-sharing service Uber as an analogy' (Congressional Research Service, 2022). Both Anduril and Shield AI are contracted to contribute to the initiative.

The cultural shift in the US defence space (and elsewhere) is palpable. This is reflected in acquisition processes. Here too, US Deputy Defence Secretary Hicks seems to be a VC champion as she iterates the trope that for programmes like Replicator to succeed, the DoD must act with agility and 'not get mired in red tape'. At the a16z *American Dynamism* summit, Hicks was repeatedly pressed on the question of acquisitions as the largest hurdle to innovation in defence – the '300-pound gorilla'. Her response is indicative of the ways in which the government perspective has already adjusted to the needs of startup contracts and is worth quoting at length:

I think we have to fundamentally reform defense acquisition. But we are down that path. We did have the alternative acquisition pathway, middle tier acquisition pathways, for example. We have to prove those out. We have to show that those pathways, software is one example, we've already put billions of dollars through that software acquisition pathway. Now we have to show our oversight committee that we can deliver through those alternate pathways because there is a different oversight model built into those. And it's really about trust between Congress and the executive branch to prove out that we can do good things with the tools that they've given us. (a16z editorial, 2024)

Hick points here to one of the crucial changes made to the acquisitions process to adjust to shorter contractual timelines. The Adaptive Acquisitions Framework (AAF), adopted in 2020, facilitates multiple acquisition pathways through different, more adaptable authorities which can accommodate software products with more flexibility than traditional contracting allows. Indeed, the DoD did not have an acquisition strategy for 'software as a service' prior to this. In addition to the AAF, other initiatives allow for more flexible contracting with less oversight and greater ease. There has, for example, been an expansion of the Other Transaction Agreement (OTA) use. OTAs are agreements that do not fall within the regular procurement channels and allow the DoD to bypass the Federal Acquisitions Regulation otherwise in place for defence procurements. OTAs are more flexible and faster and can accommodate non-traditional contractors, ideal for the startup sector. But they come with diminished oversight and accountability which are otherwise in place to protect the government and the taxpayer (Schwartz and Peters, 2019: 8). OTAs

have become popular instruments for the DoD, ‘to the tune of billions of dollars’ (Temin, 2023) and Anduril and Palantir have significantly benefitted from the use of this agreement type. A third shift worth highlighting is the introduction of the Office of Strategic Capital (OSC), instituted ‘as a means of connecting defense tech startups to venture capital and private equity’ (Gonzalez, 2024: 13). With this, the OSC facilitates making more capital available to the private sector by ‘enabling the Pentagon to provide loans or banking guarantees to defence tech firms and military startups’ (Marshall, 2023). The OSC is spearheaded by individuals with vested financial interests in the sector; this, as Senator Elizabeth Warren pointed out, risks ‘a conflation of interests that creates clear conflicts’ (Warren, quoted in Giorno, 2023).

Adjusting to the VC sector means accelerating action horizons and prioritising scale. It also means that the defence sector has to square the technology sectors’ overt aversion against regulation with government oversight mechanisms that are rooted, in principle, in democratic accountability and a reasonable demand for transparency.²⁰ VC influence appears to shift the balance towards the former: less stringent regulations, less oversight, and more trust in private actors, in the hopes that ethical values and norms will be upheld for a sector in which the moral stakes could not be higher. There are already indications that, with a growing number of technology startups and VC investors in the mix, further adjustments in favour of VC interests will follow. Increasingly, demands are voiced that the military should loosen its requirements to own the intellectual property rights for the products made for its use if it wants to continue to promote innovation (see for example Sankar, Dohrman, and Zimmerman, 2024).²¹ Loosening the grip on IP rights would essentially mean that a software company could, in the worst-case scenario, hold any government institution who has integrated certain digital infrastructures into its processes and has come to rely on them – be that all-domain autonomous drones, or multi-domain networks – to ransom, or, in a least worst-case scenario, that a supplier can lock in an infinite number of ‘necessary’ services to be contracted to the government, essentially creating a monopoly, or oligopolies at best.

The government is on the backfoot as it tries to blend its own ethos with the demands of VC funders, resigned to become reactive to the demands of the technology industry and its VC ecosystems as it gradually remakes itself in the image of Silicon Valley. A recent DIB report illustrates this effectively. The report urges alignment of incentives ‘to drive faster tech adoption’ by the US government. It zeros in on innovation as a core value and reiterates many of the VC narratives of urgency, crisis, and patriotism highlighted earlier in order to advocate for ‘urgent reform’, foregrounding speed, risk, and scale. It suggests there is a ‘clear and present danger’, namely ‘an existential challenge: [the DOD’s] incentive structures are broken, consequently obstructing innovators from adopting new technologies faster, or at all’ (DIB, 2024: 2). The recommendations to remedy this danger resemble the VC bestseller ‘Blitzscaling’ quoted earlier: ‘accelerate speed’, ‘embrace urgency and adaptability’ (19), ‘stop rewarding mediocrity’ (18), ‘cultivate an organizational environment that embraces new ideas by rejecting doing things the same way’, ‘Innovate to Win’ (17), ‘reward and recognize trailblazers and mavericks’ (24), and, ‘embrace risk-taking as a crucial and necessary form of improving DoD actions’ (16). This maps neatly onto the financial risks required to thrive in a Silicon Valley environment and we can see this approach working for many of the more prominent firms. With its focus on iteration, agility, risk, speed, and scale, the new defence culture performs both the logics of its new AI products and that of the VC companies that fund the startups that produce these products. It is a holistic shaping of the environment towards the vectors that make Silicon Valley VC investors enormously rich. But, in the context of defence, it is not difficult to see the many ethical challenges that arise from this imprint of financial priorities.

The shift towards specific VC logic produces a number of effects in the broader real world as it pertains to warfare as a political and ethical matter. One possible effect is that it

normalises an aspiration for a controlling reach into geographies across the globe, with the justification of superior threat detection. By assuming that flawless information through AI platforms is possible, the justification for expanding surveillance and incursions is easy to fashion. Given that the United States, for example, still has counter-terrorism operations in some 78 countries across the globe, it's easy to see what this technology could do (if it were to work as promised), but importantly, it normalises an understanding that the United States (and allies) have exceptional global surveillance and control privileges. A second likely effect is that it may normalise, if not promote, the launch and sale of flawed and inadequate AI products, which will inevitably cause harm to innocent civilians caught in the crosshairs of conflict. AI is not yet particularly robust enough for a context so complex as warfare and these products are only as good as the data they are trained on, which is often extremely hard to come by (Schwarz, 2021). Most AI products will need frequent updates, and already there have been reports that software updates from companies like Anduril, for example, 'are slow to arrive' (Economist, 2024). An already palpable third effect is that more and more funding is directed towards making the Pentagon function like a startup, and rapidly adopt technology innovation (which usually is software), and away from other initiatives that might have more oversight, utility, or effectiveness in the context of defence operations. But, perhaps most alarming is the logical consequence of what has most utility for the VC sector and its mandate for hypergrowth: to get the military-industrial sector to grow fast, perhaps the best catalyst is war, or at least the embrace of its possibility.

Conclusion

In 1933, at the outset of World War Two, Simone Weil observed that 'one can neither solve nor even pose a problem relating to war without having first of all dismantled the mechanisms of the military struggle, that is, without first analysing the social relationships implied by war under the given technological, economic and social conditions' (Weil, 1945). The new VC defence landscape constitutes one of these givens and deserves close scrutiny if we are to better understand how defence and security cultures and with that the global security landscape is influenced by these new actors. VC managers and partners like to portray their endeavours as fundamental pathways to much-needed innovation, as facilitating the new, the exciting, the progressive, and the beneficial. But VCs are not charities. Understanding the primary motivation of the new financial defence actors is one aspect of this scrutiny, and I have suggested here that there are inherent tensions between the interests of VCs investing in defence and startups and that which is prudent for the defence sector, in line with the high ethical stakes attached to its main endeavours. The America's Frontier Fund (AFF), a recent VC enterprise backed by Eric Schmidt, Peter Thiel, and others, offers a glimpse into the wider aspirations for disruption. The AFF focuses on technologies for the 'national interest' and is part of what is known in Silicon Valley as 'patriotic capital' – a VC rush towards US defence investment and 'a swing to patriotic ideas' (Sommerville, 2024). The AFF's declared mission is 'to generate extraordinary returns for our limited partners by scaling the next multi-trillion-dollar platforms of the future' (AFF, n.d.). It reveals a certain worldview, one that centres on financial rewards, and to achieve these extraordinary financial rewards, the world must bend towards that aim.

I want to stress that this is not to say that defence might not benefit from an overhaul, a general change towards more agility in some of its processes, or a shift in how warfare is approached, based on new technologies. One might even concede that the future of warfare is indeed multi-domain focused and critical (material) mass oriented or that some level of autonomy in its systems will yield a combat advantage in an increasingly complex

digital environment. But it stands to question whether all these things can be achieved by bringing AI-based startup products into the fold with more speed and at greater scale, or by hitching one's waggon to an Uber-like platform, the smooth functioning of which will be crucial for a long time to come.

Given the fragility and high-maintenance needs of software-based products and especially off-the-shelf products, defence departments and military organisations have a duty to resist the AI hype and take their time thinking through the implications of fashioning themselves too closely after Silicon Valley and its ethos. Some of the most successful Silicon Valley products leave behind an enormous wealth for their investors and founders and a wake of debris, dependency, and instability for many of its users. While some of the new defence players may well have the best intentions in building a robust new defence infrastructure, the allure of enormous financial gains that are familiar to Silicon Valley actors cannot be dismissed. And where a company's primary mission and aim is to produce outsized returns to its investors, the financial mandate will have priority over everything else. In this instance, it is growth in valuation. It should give us pause to think about what culture and what practices are likely to become prevalent as defence organisations change the way they think and act. As I have written elsewhere, move fast and break things is not a suitable motto for any conscientious military organisation (Schwarz, 2024).

Notes

1. The 'primes' include Lockheed Martin, RTX Corporation, Northrop Grumman, Boeing, General Dynamics, BAE Systems, and others.
2. Dual-use technology refers to technology that can be used for both civil and military purposes. This includes most software products.
3. This is spending in US\$, not as share of GDP. Notably, the US defence budget declined, in dollars, between 2011 and 2015 by just over US\$100 billion, but has since then grown significantly. The United States continues to outspend the rest of the globe in terms of defence by a significant order of magnitude – it accounts for nearly 40% of global defence spending.
4. The FT reports that 'they are forecast to generate cash flow of US\$26 billion by 2026' (Pfeifer, Mathurin, and Nilsson, 2024).
5. Shield AI specialises in AI-enabled drones and works towards autonomy in defence operations, including targeting. The company was founded in 2015 and is valued at US\$2.7 billion in 2024. Major VC backers include a16z.
6. HawkEye 360 is a data analytics company for space-based mapping and geolocating systems. The company was also founded in 2015. It is valued somewhere between US\$1 billion and US\$10 billion at the time of writing. Prominent VC backers include BlackRock and Shield Capital.
7. Anduril Industries is an AI and robotics company making autonomous systems and network software, including battlefield insight systems and decision-systems. It was founded in 2017 by Trae Stevens (formerly Palantir), Brian Schimpf (formerly Palantir), Matt Grimm (formerly Palantir), Joseph Chen (formerly Oculus), and Palmer Luckey (formerly Oculus). Its latest valuation was at US\$14 billion. Prominent VC supporters include Founders Fund and a16z.
8. Rebellion Defense is another AI platform company which specializes in providing software systems for defence and intelligence operations and autonomous decision-making in systems. It was launched in 2019 and is currently valued at US\$1 billion. Prominent VC firms include Innovation Endeavors (Eric Schmidt's VC firm).
9. Palantir is no longer a startup as it went public in 2020. Palantir is a software company that specializes in AI platforms and big data systems, not exclusively for defence by for various commercial customers as well as a range of government sectors across the globe. It was founded in 2003 by Peter Thiel, Alex Karp, Joe Lonsdale, Stephen Cohen, and Nathan Gettings. At the point of IPO exit, Founders Fund's stake in Palantir came out at US\$1.4 billion (Kunthara, 2020).
10. Epirus is perhaps the least well known among the new defence unicorns. Epirus also makes AI enabled systems for counter-drone operations, specializing in software-defined directed energy systems. The company was founded in 2017. It is currently valued at US\$1.35 billion. Prominent VC backers include 8VC, which is Palantir founder Joe Lonsdale's VC firm.

11. Founders Fund holds vested interests in the most successful defence startups to date: SpaceX, Palantir, and Anduril. It also holds investments in a number of dual-use companies including Neuralink, OpenAI, and Facebook. The latter two have recently begun to pitch products for defence purposes. Andreessen Horowitz has investments in many other prominent defence startups, including SpaceX, Anduril, Shield AI, and Skydio; General Catalyst also has VC investments in Anduril as well as Helsing, one of the most prominent European defence AI unicorns. None of these VC firms are investing exclusively in defence startups, rather they tend to support a range of Silicon Valley startups that can, if the market proves lucrative, be nudged towards supplying their products for the defence sector.
12. Prominent defence-oriented VC firms hold investments in the same companies and are connected via a relatively small networks of prominent individuals in this space. Moreover, individuals working within the startups have moved across companies. Many former Palantir employees, for example, moved over to Anduril, including Anduril's CEO Brian Schimpf who left Palantir for Anduril in 2017.
13. Shah is now managing partner at the VC firm Shield Capital.
14. As Palantir CEO stated at his acceptance speech for the Business Man of the Year Award: 'I'm proud that we have dragged and kicked and cajoled and humiliated' various actors for there to now be a defence eco system (Palantir, 2024).
15. For a detailed list of former military and government staff who are now employed by defence-related VC enterprises, see Lipton, 2023a.
16. Total Addressable Market, a key metric in venture capital valuations.
17. Incidentally, some of the more prominent defence VCs have had (and possibly continue to have) investments or business ties with China, including investments in products for the Chinese military (Sommerville, 2024).
18. Anduril is so entrenched in this discourse that one of their internal teams cultivates the slogan 'China 27', by which they refer to the benchmark they set that any weapon system that would not be ready for a conflict between the United States and China by 2027 would be disregarded (Economist, 2024).
19. In a 2024 op-ed in War-on-the-Rocks, three Special Competitive Studies Project staffers suggested that what was previously conceived as 'competition' with China should be upgraded to a 'rivalry' for a greater sense of urgency (Tobin, Goldman, and Kurata, 2024).
20. There are different shades of this aversion, with perhaps the most vocal advocate for unconstrained innovation is a16z's Marc Andreessen, who, in his 2023 techno-optimist provocation names social responsibility, trust and safety, tech ethics, risk management, de-growth, and limits to growth as key obstacles in the pursuit of technologically modulated greatness, alongside bureaucracy and regulatory capture (Andreessen, 2023).
21. Sankar and Zimmerman work for Palantir; Dohrman is CEO of the technology startup Tangram Flex.

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