Xenowar dreams of itself

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Abstract

What has war become in an age of recursive computation and the globalised technobiome? Combining speculative fiction, Clausewitzian theory and metadisciplinary analysis, this exploratory piece outlines the emergence of a war that is both new and familiar—Xenowar. 'Xeno' because this war incorporates the alien and the Other into a new, dynamic, topological trinity. Xenowar is the Clausewitzian trinity spun in recursive loops of alterity, where conflict diagonalizes into an inhuman, alien cognition. War persists, but Clausewitz's *wunderliche Dreifaltigkeit* morphs to become topological. Combatants emerge from corporations and nations as the understanding of war as human activity evolves into the realisation that all human activity is now war. 'Users' are a 'standing reserve' for the *Gestell*. Simultaneously, the technological and biological merge, transforming conflict into three dimensions in a way that emphasises connection and shape, not geometry. This deforms war's properties while preserving its form: asymmetry will be expressed as inhuman scales, and feedback loops will redefine geopolitics. Topological equivalence will mean the continuous mapping of States within Stack homeomorphism via oscillations of stretching and contraction. Westphalian deformations will increase turbulence at higher manifolds and dimensions. Equally, an inability to cut and paste borders of Stack topology will accentuate disconnection. Some Stacks may be enantiotopic to each other, mirror images but not superimposable. At other scales friction will spiral in recursions of homotopic functionalities across Stack infrastructures and diastereotopic data planes of invertible war: 'recurgency' will replace insurgency. State and Stack firewalls will constitute cosmotechnic event horizons of compression. From this black hole of Xenowar will pulse another type of Un-War, fought at the edges of the incomputable, an axiomatic reboot of Non-Turing mathematics and non-Abelian anyons of topological quantum computing. Sovereignty will not just be defined in the ontology of mathematical alterity. Life will prove non-computable. Adverserial relations will thus multiple via biolocial processes of mutation, while digital war's front lines will recede to reflevive, recursive interstices. Consciousness is another limit upon which total war will press, and when war has co-opted consciousness what will we do—or even be?

Keywords Speculative · Information · Alien · Clausewitz · Computation · War

Prologue: Xenowar in the 'Chinese room'

What follows is a speculative, fictional story.[1]

October 1, 2020. Western Sydney, Australia. Still in a semi 'Rona Iso' 10-year-old Australian Chloe Yingchao is playing *Fortnite*. Eliminated, exasperated, she posts an ironic emote parody on *TikTok*. Her mother turns from her own PC and suggests—in Mandarin/Dialect hybrid—Chloe's social time is up. Time for homework. Briefly distracted, Chloe's mum takes a photograph of her daughter and shares it to a chat group in Chinese-owned social media app *WeChat*.

On the same day, 20-year-old junior engineer Xiang Kairan from Shenzhen is among a group that sits down to tea with Provincial Communications Administration officials and a local leader from the telecom company China Unicom. Ostensibly, the men are meeting to discuss the role of 5G within Tencent intercity mobility predictions for 'nowcasting' the epidemiological data for spread of COVID-19 from Wuhan into Shenzhen since January. But the central concern of their get together involves different forecasting. Xiang is a junior city official from the industry and information

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[1] These pieces of speculation draw on the work of Rob McLaughlin, James Mortensen, John Stachurski, August Cole, PW Singer, McKenzie Wark, John Searle, Christoff Koch, Benjamin Bratton, and Jeff VanderMeer as well as a number of scientific studies.

technology bureau overseeing the planned installation of a total of 45,000 5G base stations in Shenzhen, achieving full 5G network coverage by October 2020. COVID-19 had impacted the speed of the rollout, and they are behind schedule. The men were talking how fast they could catch up.

Flash forward to the year 2035, Chloe has just crossed over into Shenzhen with the help of the Hong Kong Republican Army (HKRA). A climate-change-induced weather event has helped Chloe slip in undetected via a port. Her arrival coincides with a spiral of geopolitical escalation. 2028 legislation in the EU led the US Congress and the UN to reconsider the nature of sovereignty itself. The unexpected death of Chairman Xi Jinping in 2033 led to a power struggle in the CCP. US President Ivanka Trump continues to affirm a policy of minimal intervention but elevates readiness to a state just below outright declaration of war. Over the previous seven years, critical infrastructure, energy and logistical organisations required enhanced physical and digital defence from state adversary and environmental protesters alike. Information has increasingly become central to production, the functions of civic identity and service delivery. A new breed of corporate warriors emerged as a cyber-military services industry to defend the ICT infrastructure and data, and as civil-military relations blurred, investment in the infrastructure of satellites and space and even the law of war began to change. Chloe is one of these operators.

The flow on effects of all these events has resulted in an escalation of the previously grey-zone digital integrations of Taiwan into mainland political systems and destabilisation across the Indo-Pacific. A series of rolling multi-vector, multi-wave, pre-emptive and sustained cyber campaigns across global cities ensues. In response, former state official and tech entrepreneur—now regional warlord—Liu Yongfu has deployed a swarm of robot devices to control the City of Shenzhen. Whether this is to benefit China or himself in an internecine conflict is not clear. But the city is considered to be the base for many global cyber storm events in other parts of the planet.

This system is dependent upon the now ageing 5G network backbone that engineer Xiang Kairan has control of as the chief technological official in the city. The attacks also require the use of submarine cables near where Chloe has come ashore, and their sabotage is one of the reasons she is there.

Chloe is now a cyber mercenary commanding a four-person team and a small swarm of air and water deployable sensor and offensive capable automated UAVs or Drones. As the most senior enabled communications and Internet of Things (IoT) engineer and an official Chloe is looking to locate and capture Xiang Kairan, whose biometrics are critical to the sequencing of a proposed Cyber Typhoon event designed create friction in the hub of China's information economy and military power.

In the early to mid-2020s, China's cyber security was known to be exceptionally weak. This enabled a beachhead, a foothold for a complex network of well-supported AIs to analyse, store and predict. Chloe is using the more than nine years of surveillance data—especially the IoT feeds on Xiang himself—that have been part of a monitoring campaign—to target him live.

But Chloe has a more immediate problem—her own ability to see. In the shift from marine to littoral city, Chloe's facemask fogs up. Forced to remove her facemask, a flurry of metabolite emanates to create a sensor wake. She curses and makes a joke about the Australian-made product and Prime Minister Penny Wong's 2028 pronouncement that Lithgow would be Australia's 'Silicon Valley meets Shenzhen'.

Australian adversarial AI—*Diaea Evanida*—streams in response. Despite the electronic camouflage, facial exposure triggers Shenzhen AI facial recognition surveillance technology. The picture upload by her mother onto *WeChat* and the walking gait from *TikTok* posted back in 2020 combine with over five years of data from her obsession with playing *Fortnite* and with the further information extracted from the Chinese-owned data centres of these companies, to predict her next tactical move. Her own sensor swarm picks up the compromise and provides an alternative to Chloe.

Just as she cognitively pivots into an alternative, a livestream video is sent to the mobile phone she uses for local comms. The video features her mother being murdered by a PLA Polynesian gang sleeper group in Western Sydney. The video is a deep fake predetermined from prior data and live motion, and algorithmically created in seconds. The video technology was designed to predetermine the behaviour of someone like Chloe, generated just before an attack with the aim to deter and interfere with their decision tree ahead of battle. Trauma floods Chloe. The Elon Musk Neuralink Brain-Computer Interface (BCI) detects the neural explosion in the posterior cerebral cortex and responds firing a charge across the electrodes embedded in her parietal cortex, while via a cannula dopamine floods Chloe's prefrontal cortex, recalibrating intrinsic consciousness. In a rush of connectivity, Chloe's cortical sheet unifies a luminous here-now as a brief *nowhen*. Reboot. Cognitive clarity.

Instantly she and the team swing into plan B. They have access to the phone of Xiang Kairan's wife and a mid-level military intelligence commander close to the warlord. A message is inserted on phone of Xiang's wife which suggests Xiang is collaborating with the Taiwanese Separatist Movement (TSM) and the Hong Kong Republican Army (HKRA). Simultaneously a message which appears to be from the warlord himself is planted on the mid-level commanders phone suggesting checking Xiang's wife's phone as he is traitor. Data has itself become a pure weapon.

The kill chain of automated drone system which surveils the city is triggered when 15 min later a joint MPS, PLA and

PAP SWAT team raid the office of Xiang's wife, download the data of her phone. The tech billionaire warlord's drone eliminates Xiang.

Chloe's team fight a tactical retreat to an emergency rendezvous within an Unmanned Underwater Vehicles (UUV) controlled from a distant nuclear submarine, and two of them are killed. On the way, the UUV detonates a charge against the Shenzhen submarine cables.

War is dreaming of itself

'Sometimes war dreams of itself'.

In his 2016 documentary *Lo and Behold*, the filmmaker Werner Herzog asks his guests, from Elon Musk to brain scientists: 'the Prussian war theoretician Clausewitz–Napoleonic times—once famously said "sometimes war dreams of itself", could it be that the internet starts to dream of itself?' His question produced wonder at the brilliance of the provocation and reflective answers from experts (Herzog 2016).

I could not find this reference anywhere in any of Clausewitz's writings.

Puzzled, I emailed Herzog to ask him where he found that reference. His producer and brother Lucki Stipetic replied with a one-line answer: 'This quote is invented by Werner Herzog and contributed [sic] to Clausewitz'.(Stipetic 2017)

Clausewitz is the theoretician most turn to characterise modern war. Clausewitz's theory, while approaching its bicentenary, offers us a guide to approaching the wicked problems of the planetary present and beyond. Our efforts to capture something of the shifting surface of war over time has led us to keep adding modifiers to explain its changing forms. 'Digital War' may well explain war's latest appearance. But Clausewitz seeks to explain war's nature, deeper than its surface expression (Clausewitz 1984).

Clausewitz's war is an 'organised complexity' (Beyerchen 1992, 2007), and the chameleon has a quality of organicist animality to it. In the last century, war has expressed mutation at each generation: from a syntaxis of modernism's fusion with total war, through the dystopic parataxis and adjacency of postmodern conflicts, to our present a-topic metaxis of being 'both-neither', but with a resonant oscillation (Vermeulen and van Den Akker 2010). That is, the metamodern is a platonic non-place where, in this temporal formation, contemporary reality is 'both-neither'—at once modern and postmodern, and neither of them.

It seems clear that the chimera of current circumstances demands a new meta approach to understanding our situations and problems: analysis that thinks, and dreams, of itself. In this piece, I will seek to deploy insights and knowledges from a range of disciplines and approaches not with an intention to reconcile or synthesise them, as interdisciplinarity might propose, but to generate a higher, more actively

self-reflective, perspective or awareness. This flows from my work on the urgency of understanding cyber security as a metadiscipline,[2] but is more broadly applicable as we consider the questions posed in this issue about the future of war itself (Sear 2017).

Clausewitz wanted to define war's essence. To him, war is a trinity of 'irrationality/non-rationality/rationality'. War is a 'chameleon' whose skin reflects firstly violent affect, secondly creativity and chance, and thirdly its subordination to 'pure reason' as an instrument of policy. The first of these exists in an individual skull, separate from rationality which exists in multiple skulls. The third (not emotion or calculation) exists outside the skull as external reality (Bassford 2007). War, Clausewitz's analysis suggests, exists as an interstice, a membrane between the experience of consciousness and the world. War is a creation of simultaneous, mutually constituted interaction between selves and societies, adversary and environment. The trinity is reflexive interplay, a continuous feedback loop.

In this short, exploratory piece I argue that digital computation has become the vehicle for these processes between the trinity. Cybernetics enables meta realisation of war's essential dynamic forces. A human–machine ensemble organises the relations of the trinity, specifically the interplay between violence, chance and probability, and rational calculation. Computation interacts dynamically with humans and with itself, as explored in the speculative fiction that begins and ends this article.

Turing, Shannon, Weaver, von Neumann and Wiener created the current informational epistemic epoch in a previous 'world' war. Their 'worlding' of ours has helped generate planetary scale recursion conflict. Computational recursion is now integral to the reflexive interplay of war Clausewitz describes. War has been integrated into human machine individuation, which is 'constituted by the two 'poles of interiority and exteriority, which consist of a recursive movement: the interiorisation of the exterior and the exteriorization of the interior'.(Hui 2019b)

The computation of information within this new form of sovereignty incorporates individuation and reproduces it through one core component of itself: recursion. Recursion, so central to the development of the Church–Turing Thesis, is integral to computability. A recursive function is one which calls on itself as part of its execution, until it reaches a halting state (a goal or the incomputable). As such, it is an automation which is self-realisable. Recursion occurs in

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2 'Metadisciplinary means an area of knowledge that studies itself. Cyber security be imagined and created as a metadiscipline—an area of vast, interconnected knowledge with a pressing imperative to study itself'. Author, 'Cyber Security as Metadiscipline: Framing the future of cyber pedagogy' Realigning Cyber Security Education International Workshop 27 November 2017, UNSW Canberra.

computation at all levels, from the function of algorithms to planetary scale communications. For example, Google takes all the data of its users and returns it back, as advertising for example, and at a meta level thus reproduces itself (Hui 2019b). Philosopher Yuk Hui has described a recursive computational hermeneutics that 'evaluates the past in order to anticipate the future, which in turn determines the present'. (Hui 2019b) Recursion is now integrated into a new form of the social that is cybernetic. This new relation between human and machine is why Heidegger stated that cybernetics had taken the place of philosophy. Or, as Yuk Hui condenses, in summary of Heidegger's position: 'cybernetics is fundamentally a metaphysical project' (Hui 2019b).

Digital computation's mature recursion between the membranes of Clausewitz's trinity has expanded the relationship between the character and nature of the war without breaking it. Consider *Computational Clausewitz* as a 3D Trefoil knot (Przybyl and Pieranski 2014). Cyberspace is topological: it deforms, distorts, twists war, but many of its properties are preserved. (Jordan 2009) This does not mean older forms of warfare are foreclosed, instead the topology is scalar. Older forms of warfare exist at 'manifolds'[3] where vectors intersect in Euclidean geometries and Newtonian thermodynamics of flesh and steel (Kilcullen 2016).

Senior leaders in the military who have experienced war and made decisions throughout the preceding era fairly uniformly suggest that technology will change the character of war, but not its nature, and war will remain a 'human activity'. (Langford 2019a, b)

But rather than war being a human activity, all human activity is now war. 'Users' are a 'standing reserve' for the *Gestell.* Humans are looped into an assemblage of machine temporalities of daily life as data war whorls in financialised information society. Just as a 'derivative' makes 'the future actionable in the present' (Martin 2015), data collected now by global entertainment and social media companies will be deployed in future wars. But this is less data war than database war. The *Gestell* is Otaku (Azuma 2009). Chloe plays *Fortnite*, appears in *TikTok*, and this archive provides capacity for the future in the present. Algorithmic governmentality as recursion creates Users in war who are engaged in a perpetual 'Battle Royale' convergence, rushing towards singularity.

Chloe's—and our—civilian data today will be used in war in the future. That in turn suggests that not only data will be a military objective in the future, it already is. The Law of Armed Conflict (LOAC), Article 52, states that all attacks

must be limited to military objectives (ICRC 1977). Tallin 2.0 (Rule 100) argues that data is not a military objective because Tallin does not consider it be an 'object' within 'ordinary meaning' as the manual suggests it is 'intangible' (Schmitt 2017; McLaughlin 2018).

Clearly something like weapons system software could be a military target. But digital information might also be used in a deception operation to have kinetic effects—like the data Chloe uses to have her target killed. Cyber influence/information operations (CIO) with lethal effects, Chloe's 'Plan B', implanting a message on the phone of the target's wife, is one such example. But how Chloe is targeted, and how she targeted her adversary, deploys data from civilian systems. Both Chloe and her adversary exploit past exfiltration and encryption as part of cyber interference. This data was and is civilian—but how it is used and where it is held makes it both a military object and an objective. For data to be targetable as a military attack the LOAC requires combatants to mitigate the effect of collateral damage on civilians and infrastructure in targeting through the LOAC. This is likely to be challenging, given cyber-attacks are likely to target or use that very data (McLaughlin 2018).

In *Cyber War Will Not Take Place*, Thomas Rid claims that cyber measures do not constitute war, claiming computation has accelerated older forms of conflict like sabotage, espionage and subversion, but not war in a Clausewitzian sense because the effects are not violent or kinetic (Rid 2013). However, the cyber information and interference operations described in the speculation have effects which are kinetic. Differentiating non-targetable espionage data from data that has lethal effect means cyber IO will be considered a normal part of war.

Operations in the Information Environment (OIE) will expand contest further into the civilian interface globally (Morgan and Thompson 2018). Digital computation has enabled a paradigm shift of political economy at a planetary scale. Information has become a commodity. Data infrastructure—vectors, not capital—control and extract information as surplus value (Wark 2019). Such vectors are what Benjamin Bratton describes as Stacks. The Stack is a new form of planetary megastructure, a computational apparatus of exchange layers Bratton calls User, Interface, Address, City, Cloud and Earth. Stacks create a form of geopolitics that blurs the boundaries of previous Westphalian national sovereignty and territory, instituting a new Schmittian nomos. (Bratton 2015)

In the speculative opening story, war has transitioned from being about control of space and spun into the Stack infrastructure. The symbiosis of private corporations controlling such cyberspace vectors and their innovation has reflexively contributed to the decay of traditional nation-state borders, just as vectoralist insurgents hack older states. Cyber mercenary Chloe's employers and her adversaries,

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[3] Topological forms have properties whereby if you look at sections they appear as a plane surface. A 'manifold' is an object which 'locally', is a Euclidean space. Anonymous 2010. *Manifolds, Part III: Mathematical Concepts - 53* Princeton, Princeton University Press.

vectoralists in the States and Big Tech of the West (Wark 2019) and the CCP (even, the Russian Federation), are creating competing internet territories. Conflict will take place in the vertical interstitial layers of the stack itself as much as on horizontal geographies, perhaps as Stack on Stack. Large internet entities will come into conflict as states begin to look more like platforms and vice versa: Baidu, Alibaba and Tencent (BAT) vs Google, Apple, Facebook, and Amazon (GAFA) (Bratton 2017).

Asymmetry will be expressed as inhuman scales. Asymmetry in a spiral is expressed as chirality. In nation-state adversarial Stacks, these Stacks are chiral: enantiomorphic forms which are not superimposable on their mirror image despite their similarity. In this way, a US-centric hemispherical Stack is opposed to a PRC/CCP China Stack as cyberspace empires of metaxis.

Feedback loops define politics globally. Post-colonial cyberspace since 1990 has collapsed physical space. The result is a politics of time. The post-1989 Fukuyama futurist 'politics of inevitability' has disintegrated, to be replaced by the 'politics of eternity'. (Snyder 2018) Eternity politics places a legacy nation at the centre of a 'cyclical story of victimhood'. The future is a drained swamp in an eternal present. Time is no longer linear but instead is a 'circle that endlessly returns the same threats from the past'. (Snyder 2018) War has a future, but there is no future in war. The future is cancelled. The future has become obsolescent and evaporated like vapourware. Historicity has waned, and the 'experience of time itself, the phenomenological sense of time as linear as demarcating space decayed'. (Fisher 2014)

Nations of empire, starved of space for growth, look backwards to frame the future. In 2013 Xi Jinping launched 'China dream', the US Presidential campaign of 2016 promised a recursive destiny to 'Make America Great Again', and the UK sought a halting state of #Brexit (Sear 2020). Nations pursue recurring dreams. Nation states will seek to control the turbulent wake of time's arrow with data. Hybrid, asymmetrical warfare, will morph into 'recurgency' and 'counterecurgency' as non-state actors target the Global Value Chains (GVCs) of Transnational Corporations (TNCs) and asymmetries of data control and Intellectual Property (IP) become the key determinants of geopolitical security, strategic objectives and deployment of the military instrument. Asymmetrical warfare is about using unconventional tactics against a superior force. Informational contests are now about time, where, in an era of post scarcity, advantages are either shortlived, or decisions entropic. Recurgent activities are about using asymmetrical tactics of temporality. Whether you are cyber or psyops - Shadow Brokers, or the Internet Research Agency - all operations are about *influence*: compelling an enemy to your will. Or, more precisely: shaping their decisions (Sear and Lieber, 2019. War and warfare is increasingly about shape and shaping. The shapes are topological and recursive. Recurring dream (nation) state narratives of eternal loops, are Möbius strips where a military objective is no longer *victory* but *vector*: the continuation of *politik* by Other dreams.

While the temporal horizon recedes, data accretion fills time's vacuum. The 'exosomatic deterritorialization' (Stiegler 2018) of data provides archive and cloud interface for a future adversarial AI Ragnarök.

AI already diagonalizes as an eigenvector into inhuman, alien cognition. Extreme recursive Otherness will spiral into the start of the Xenowars of the mid to late 21st century. Xenowar is the Clausewitzian trinity in recursive loops of alterity, where conflict will close on the uncanny (Sear 2016). From this event horizon of war's future black hole will pulse another type of un-war, where the future of war will be the edges of the incomputable, a matrix decomposition into a canon of Non-Turing mathematics. As quantum topological computers reinforce their enclosures, Non-Turing computation will question first conditions. Limits, which are reflexive borders, will evolve at the strange attractor of recursions.

Consciousness is one such limit. Consciousness is experience, the phenomenological. It is informational, integrated, definite and a perspective in time. (Koch 2019) Ultimately, consciousness is 'intrinsic causal powers'. Integrated Information Theory (IIT) suggests consciousness is a cause-effect power arising from integrated information in a reentrant system (Koch 2019). Reentrant is a feedback loop with cause and effect power on itself. (Fallon 2018) Recursion is also the key to computation. Computation has held sway for 75 years as the basis for the human mind and consciousness. The exact opposite may be true. One IIT shows that consciousness is non-computable. Yet, if consciousness is non-computable, it is possible that war will seek to intervene into the experience of consciousness itself. Augmented Reality (AR) deception will intercede like glitches, seeking to hack the unhackable.

The reflexive seperation between computation and consciousness reveals the role of recursion at higher dimensionality. War combines the intrinsic causal power of consciousness upon ourselves and, through violence, deploys extrinsic powers to effect that experience of will onto other humans. As Clausewitz noted, 'violence intended to compel our opponent to fulfil our will' drives the trinity's function. This information is subjective, an affective form. Information is integral. Computation as information processing interpolates the layers of the Clausewitz trinity as a topological form—a Trefoil Knot—distorting war's properties while preserving its form. As it does, the process loops individuation into a new kind of epistemology. War's adversarial accelerationism, in its Trefoil Knot armature, extenuates as it exposes the category of the human, through endless loops of Turing trauma.

Emergent is a 'mechano-organicism', where 'digitalization' is shorthand for computation 'becoming organic', seeking to heal the wound of alienation in the inhuman (Hui 2019a). But just as Clausewitz's theory interpolates the layers of the trinity, and as computation is now a layer which accelerates the recursive spirals of the trinity, so it would seem all this further ties back into a recursive power that is a natural force equivalent to cause and effect of the laws of physics in human consciousness. Information in consciousness is highly integrated. The Turing Trauma triggered a displacement of the human form of cognition itself.

Deploying the Clausewitz rubric, militaries tend to agree what separates the 'character' of war from its 'nature'. The character describes how war is fought and its subjective experience. Nature describes what it 'is'—an essence—it is immutable and inherently human. These categories, of 'nature', 'essence', 'eternal', 'rational', 'willpower', 'human' and the 'universal', are rarely interrogated as being in flux within these arguments and their assumptions. Recent analyses suggest AI squares the trilogy as autonomous calculation varies the speed and complexities of elements but just tweaks the components (Hoffman 2019). Traditional military conceptions of consider Clausewitz's trinity as a two-dimensional isosceles triangle. Instead, *Computational Clausewitz* has transformed conflict into three dimensions in a way that emphasises connection and shape, not geometry. Rather, I suggest the trinity remains, but computational recursion has added more than speed—it reconstitutes the relationship between the subjective and objective in conflict as it constitutes a new mathematical topology of war. Rather than enclosure, contingency is incorporated via recursion's loops. Another of war's chameleon skins emerges—Xenowar.

Xenowar is topological. Xenowar is an abstraction of connections, independent of its representation, appearance and form: it is 'geometry without distance or angle' (Jordan 2009) Intrinsic recursions of causal powers which form integrated information, such as consciousness and the will to compel another consciousness to that will, whorls into the knot of war. Meanwhile, extrinsic computational recursion spirals into the chirality of emergent alien cognition.

Computational agency as alternate cognition will introduce other than human agents to war (Dwyer 2019). Move '37 s' will replicate (David et al. 2016). The accelerationism of AI will create cognitions that are alien (Parisi 2019). Climate change will incorporate the in/nonhuman as both a force and subject of ecological governance, and a necessary condition of war. The planet will introduce causal force as turbulence into the Trefoil Knot, compelling militaries to defend ecologies, even tearing social democracy's 100 year tenure with human sacrificial civic participation, to include ecologies, animals and molecules (@Bratton @TomSear 2020). Equally, a recognition that artificial intelligence is *not* artificial but something inhuman still generated by the planet, will inversely refuse the 'naturalness' of sectionalising human bodies as gender (Hester 2018). Cybernetics as metaphysics may spiral Stacks into a conflict-seeking singularity, or cosmotechnics (Hui 2016) that emerge as Stack enantiomers. Singularity is unlikely to be a teleology in one fundamental manifold. The armature of computational recursion will continue to spiral towards an event horizon of the incomputable: consciousness itself. At this horizon, the feedback loops of causal power that compose the experience of consciousness will confront those that which are alien. Then at its zenith, Xenowar will discover whether intrinsic and extrinsic causal powers are really just homeomorphic dreams of itself = dreams it has dreamt before.

Epilogue: Xenowar in the swarm

Chloe returned to Australia. The experimental predeployment Pre-Traumatic Stress Injury via N-methyl-D-aspartate-type glutamate (NMDA) receptor stimulus that had been triggered before her operation didn't quite work as planned. Chloe began showing signs of condition now called 'PowerShellshock', an echo of the mysterious 'Shellshock' of the First World War. The shell of this post combat malady referred to was not canistors of artillery but of computer 'shells', the outer most layer of a kernel. But unlike those of the First World War, the veterans of the first Xenowars exhibited strange non-PTSD-like symptoms. Whereas PTSD psychopathology sustained neurobiological effects, or environmental matrices like Gulf War Illness (GWI), returned soldiers of the first Xenowars exhibited symptoms more closely associated with prior germline gene editing, and alien epigenetic effects in offspring. Vets often referred to this as the 'daemon', the 'D-Bus' or more wryly as 'Hitting Enter'. Conspiracy theorists on Neurabook whispered of hushed up quantum teleportation experiments gone awry.

Intravenous infusion of ketamine hydrochloride (0.5 mg/kg) had no therapeutic effect. Previous positive trials of combatants in the Spratly sWARm 2029 Electro-Magnetic Spectrum Operations and the Amazon Biome Battles ingesting 1ml/kg of placebo or ayahuasca adjusted to contain 0.36 mg/kg of N,N-DMT-even in Shipibo shaman managed environments had no effect throughout the early 30 s.

In response, the Amazon Department of Veterans Affairs (AVA) created a new future for the Undead return from the First Xenowar (FXW). The conjecture that consciousness could be shared across being, the promise was isolation of consciousness genetics transmuted into other life forms and expressed in milder forms spread across future generations of multiple species. Arlington and Commonwealth War Graves Commission (CWGC) inspired the soldier DNA was fused with species DNA extant in the wild exclusion zones. Chloe lived in the Wollemi Pine Park, a remote

location Amazon purchased after the seven remaining examples of the Gondwanaland remnant species became extinct in the bushfires of 2027.

The park was renamed 'Lin Bai-lo'—'Forest of Incandescent Bliss'. Here, Chloe lived in proximity to swarms of *Tetragonula carbonaria*, the native honeybee, known colloquially as 'sugarbag'. Chloe and the hive were part of new experimental program for returned soldiers. Bees have associative geospatial memory, can remember faces and understand the concept of zero. With a brain marked by components similar to humans but in a smaller package, they share our geospatial awareness/tracking, memory, capacity for communication, potential for sentience, dopamine reward circuitry, and some similar social infrastructure. The bee body is closely recurrently connected to support density 10 that of the human neocortex.

Being free from input–output cognition but wired into intrinsic cause-effect power puts the feeling of experience well beyond any computation, possibly ever. Consciousness between humans and animals is a spectrum, and bees with their similar collective life and scaled brain wiring have a glow and meta state correlatable with hominids. When it was experimentally proven consciousness is a state that could be shared, this new project began. Chloe's consciousness was being fused with this colony. Her integrated information experience spun with the algorithm tending to the spiral/chiral structure of the *T. carbonaria* brood comb.

References

@bratton @tomsear. 2020. *Tweet Thread*. Twitter. https://twitter.com/bratton/status/1214260967862722563. Accessed 20 Jan 2020.

Anonymous. 2010. *Manifolds, Part III: Mathematical Concepts - 53*. Princeton: Princeton University Press.

Azuma, H. 2009. *Otaku: Japan's database animals*. Minneapolis: University of Minnesota Press.

Bassford, C. 2007. The Primacy of Policy and the 'Trinity' in Clausewitz's Mature Thought, In eds. Strachan, Hew and Herberg-Rothe. Andreas. Clausewitz in the Twenty-First Century, Oxford, Oxford University Press. Accessed 15 July 2020. https://doi.org/10.1093/acprof:oso/9780199232024.003.0005.

Beyerchen, A. 1992, Clausewitz, Nonlinearity, and the Unpredictability of War, *International Security*, 17(3): 59–90.

Beyerchen, A. 2007. Clausewitz and the Non‑Linear Nature of Warfare: Systems of Organized Complexity. In eds. Strachan, Hew and Herberg-Rothe. Andreas. Clausewitz in the Twenty-First Century. Oxford, Oxford University Press. Accessed 14 July 2020. https://doi.org/10.1093/acprof:oso/9780199232024.003.0003.

Bratton, B. 2017. *HKW 100 Years of Now Processing Sovereignty Dec 2 2017*. Available: https://www.youtube.com/watch?v=57mJfkNCWOc. Accessed 28 Jan 2018.

Bratton, B.H. 2015. *The Stack: On Software and Sovereignty*. Cambridge: The MIT Press.

Clausewitz, C.V. 1984. *On War*. Princeton: Princeton University Press.

David, S., H. Aja, J.M. Chris, G. Arthur, S. Laurent, D. van den George, S. Julian, A. Ioannis, P. Veda, L. Marc, D. Sander, G. Dominik, N. John, K. Nal, S. Ilya, L. Timothy, L. Madeleine, K. Koray, G. Thore, and H. Demis. 2016. Mastering the Game of Go with Deep Neural Networks and Tree Search. *Nature* 529: 484.

Dwyer, A.C. 2019. *Malware Ecologies: A Politics of Cybersecurity*. PhD Thesis, University of Oxford.

Fallon, F. 2018. Integrated Information Theory, Searle, and the Arbitrariness Question. *Review of Philosophy and Psychology*. https://doi.org/10.1007/s13164-018-0409-0.

Fisher, M. 2014. *Ghosts of My Life: Writings on Depression, Hauntology and Lost Futures*. Winchester: Zero Books.

Lo and Behold: Reveries of the Connected World, 2016. Film. Directed by Herzog, W.

Hester, H. 2018. *Xenofeminism*. Cambridge: Polity Press.

Hoffman, F.G. 2019. Squaring Clausewitz's Trinity in the Age of Autonomous Weapons. *Orbis* 63: 44–63.

Hui, Y. 2016. *The Question Concerning Technology in China: An Essay in Cosmotechnics*. Falmouth: Urbanomic Media Ltd.

Hui, Y. 2019a. *Cybernetics for the Twenty-First Century: An Interview (by Geert Lovink) with Philosopher Yuk Hui*. Available: https://www.e-flux.com/journal/102/282271/cybernetics-for-the-twenty-first-century-an-interview-with-philosopher-yuk-hui/. Accessed 20 Jan 2020.

Hui, Y. 2019b. *Recursivity and Contingency*. London: Rowman & Littlefield International Ltd.

ICRC. 1977. *Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 June 1977*. Available: https://ihl-databases.icrc.org/ihl/INTRO/470. Accessed 20 Jan 2020.

Jordan, D. 2009. *A Topological Aperitif*. London: Springer.

Kilcullen, D. 2016. *Blood Year: Islamic State and the Failures of the War on Terror*, Carlton, VIC, Australia, Australia Black Inc., an imprint of Schwartz Publishing Pty Ltd.

Koch, C. 2019. *The Feeling of Life Itself: Why Consciousness is Widespread But Can't be Computed*. Cambridge: MIT Press.

Langford, I. Brigadier, DSC and Bars. 2019a. *Accelerated Warfare*. Presentation, Director General Future Land Warfare. https://www.army.gov.au/accelerated-warfare-presentation. Accessed 19 Jan 2020. https://researchcentre.army.gov.au/library/seminar-series/accelerated-warfare-brigadier-ian-langford-dsc-and-bars. Accessed 16 July 2020.

Langford, I. Brigadier, DSC and Bars. 2019b. *Re: Future War*. [Aug 8, Email to Sear, T.].

Martin, R. 2015. *Knowledge Ltd: Toward a Social Logic of the Derivative*. Philadelphia: Temple University Press.

Mclaughlin, R. 2018. *Data as a Miltary Objective*. Available: https://www.unsw.adfa.edu.au/data-miltary-objective. Accessed 20 Jan 2020.

Morgan, E. and Thompson, M. 2018. Major General. Head Information Warfare for the Australian Defence Force. Information Warfare: An Emergent, Australian Defence Force Capability-Discussion Paper 3, Building Allied Interoperability in the Indo-Pacific Region, Washington: Center for Strategic & International Studies, October. https://csis-prod.s3.amazonaws.com/s3fs-public/publication/181023_InformationWarfare.pd.

Parisi, L. 2019. The Alien Subject of AI. *Subjectivity* 12: 27–48.

Przybyl, S., and P. Pieranski. 2014. High Resolution Portrait of the Ideal Trefoil Knot. *Journal of Physics A: Mathematical and Theoretical* 47: 285201.

Rid, T. 2013. *Cyber War Will Not Take Place*. London: Hurst & Co.

Schmitt, M.N. 2017. *Tallinn Manual 2.0 on the International Law Applicable to Cyber Operations*. New York: Cambridge University Press.

Sear, T. 2016. Uncanny Valleys and Anzac Avatars: Scaling a Post-digital Gallipoli. In ed. Frances, R.S.B. *Beyond Gallipoli: New Perspectives on ANZAC*, Melbourne: Monash University Press. http://unsworks.unsw.edu.au/fapi/datastream/unsworks:44110/bin5e1185fd-daf1-4f54-a89b-79512f11a218?view=true.

Sear, T. 2017. 'Cyber Security as Metadiscipline: Framing the Future of Cyber Pedagogy'. *Realigning Cyber Security Education International Workshop*, Nov 27, UNSW Canberra Cyber at the Australian Defence Force Academy, Canberra, Australia. https://www.unsw.adfa.edu.au/unsw-canberra-cyber/unsw-canberra-cyber/events/international-workshops-realigning-cybersecurity-education.

Sear, T. and Lieber, PS. 2019. Power, Responsibility, Strategic Communication and Culture: Improving Risk Calculus in Defence Environments, In ed. Horn B, *Risk & Decision Making*, Canadian Special Operations Forces Command CANSOFCOM, Winnipeg, pp. 129–138.

Sear, T. 2020. Shanzhai 山寨 Nationalism 中国民族主义: Reflexive Empires and Digital Commemoration in China from Ah Q to AI. In eds. Walsh, Michael J.K. Varnava, Andrekos and Hutchison, Margaret. *After the Armistice: Empire, Endgame and Aftermath*, Routledge Studies in First World War History.

Snyder, T. 2018. *The Road to Unfreedom: Russia: Europe, America*. London: Vintage Digital.

Stiegler, B. 2018. *The Neganthropocene*. London: Open Humanities Press.

Stipetic, L. 2017. *Re: Anfrage Webformular*. [21 Jun, email to Sear, T.].

Vermeulen, T., and R. van den Akker. 2010. 'Notes on Metamodernism'. *Journal of Aesthetics & Culture* 2: 5677.

Wark, M. 2019. *Capital is Dead*. Brooklyn: Verso.

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