War Becoming Phantasmal
A Cognitive Shift in Organized Violence beyond Traditional Limits

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Abstract: The entirety of human existence suggests multiple war theories and competing belief systems on what war is and how it can or cannot be exercised, even if we often are preoccupied with the current framework. Premodern societies differed from modern ones on whether humans or something divine or supernatural control the contexts and outcomes of war.

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Collectively, our species retains a firm appreciation of the assumed limits of what constitutes organized violence for political, social, or cultural aims, depending on the group and context. Yet in the twenty-first century, we may finally have set into motion the seeds of an unfamiliar, potentially incomprehensible, and likely transformative pathway where artificial intelligence or transhuman modifications may reveal what is called a "phantasmal transformation of war." Complexity science explains reality and war so that earlier attempts—particularly those of the classical or natural science period and earlier prescientific attempts—are illuminated as insufficient or irrelevant outside of narrow or contextual applications. Today, Western militaries remain wedded to what is explained as a "Newtonian-style worldview" for understanding war, with select terms assimilated from complexity science and others ignored entirely. Indeed, modern military theorists assume an almost ideological devotion to what is largely a pseudo-scientific, static mode of framing war. Humans paired with certain advanced technology may also redefine war beyond previous physical domain and kinetic circumstances, including new manifestations in space, in cyberspace, and through accelerated human-machine teaming arrangements. Such novel conflict may in some applications exceed both human design and comprehension, potentially existing in planes or manifestations that are either undetectable by humans, rendered incomprehensible by select human actors, or potentially in modes that exceed the witting participation and awareness of our species.

Humans created war, and have exercised the application of warfare throughout our existence in a remarkably diverse, often contextually dependent framework of organized violence against fellow humans.[1] Yet today, even at what is undeniably the pinnacle of technological and scientific achievement so far in civilization—including modern warfare—we appear unwittingly devoted to insufficient and inadequate cognitive frameworks for understanding what war is and how future wars will differ from past historical patterns. Modern (mostly Western) militaries struggle to comprehend complex security contexts in two particular and troubling ways. First, they attempt to act within dynamic, complex systems while also attempting to interpret reality through antiquated, oversimplified, and often incompatible theories, models, methods, and terminology that are set not in complexity science but grounded in far earlier scientific or prescientific constructs.[2] Select terms taken from complexity science—such as *emergent*, *nonlinear*, *complexity*, and *systemic*—are peppered across military doctrinal publications and found in policy papers and speeches, often misinterpreted or, worse still, assimilated into the dominant system of institutionalized beliefs and behaviors that were established well before the rise of complexity science.[3] Despite advanced technology and sophisticated bureaucratic structuring, militaries really still rely on centuries-old constructs and beliefs.

The second aspect of this comprehension issue is an inability for military forces to gain "reflective practice" beyond process compliance and convergence.[4] Donald A. Schön and Martin Rein define *reflective practice*, writing that "the frames held by the actors [are what] determine what they see as *being* in their interests and, therefore, what interests they perceive as conflicting. Their problem formulations and preferred solutions are grounded

in different problem-setting stories rooted in different frames that may rest, in turn, on different generative metaphors."[5] For example, modern military professionals, if challenged on principles of war, centers of gravity, the ends-ways-means framework for decision making, or whether war has an enduring nature, will typically dig their heels in, prepared to fend off all challenges. However, most of the defense of these concepts has less to do with any critical reflection or creative exploration of why they hold such tenets in near ideological zest concerning what war must always be and more to do with convergent thinking where doctrine, past education, or the "we have always done this" biases assume center stage.

Essentially, if we are unable to think about our thinking as we think and do, we default to whatever our institution desires group conformity toward. This relegates us into rigid rule followers who are only focused on how closely we might improve our grasp of the rules for winning in war as we believe it can only be. One follows the doctrine and rules but is unable to question them without learning entirely new concepts rejected by the institution that demands compliance within these flawed constructs.[6] Most in the modern military converge toward *nonreflective practice*, unable to break out of institutionalized patterns of behavior and ritualized belief systems.[7] We know what we do yet know not why we do what we do. Due to these institutional blind spots, modern defense forces of the Western industrialized and democratic societies are about to encounter a novel shift in war itself, yet we may be ill-equipped to realize it until it is too late. Complexity theorist Jamshid Gharajedaghi surmises: "Learning to learn is about the ability to learn, unlearn, and re-learn, both within and beyond conventional frameworks . . . unlearning is much more difficult than learning."[8] Or, as B. H. Liddell Hart once aptly put it:

"The only thing harder than getting a new idea into the military mind is to get an old one out."[9] Indeed, we may be entering a new period in which we cannot get the old ideas out because we can no longer clearly understand distinctions between the physical and social realities we all exist in.

The primary focus of this article is that humans arrange socially in groups of ever-increasing sophistication that are in conflict or tension with others, generating further change and development. We create cultures and languages, socialize norms of behavior, develop religions, create legal systems, and perpetually recombine and create new variations therein. Threaded through all of this is the constant process of organized violence as the main vehicle for how humans attempt to resolve differences if diplomacy and debate fail. Groups of humans share a version of social reality in which we collectively attempt to explain past wars, rationalize ongoing conflicts, and anticipate the future form and function of emerging conflicts. This is entirely limited by what our belief systems permit and deny, coupled with how and why we use critical and creative thinking to challenge those institutionalized barriers. If we are nonreflective or the institution shuts down most critical and creative activities, our societies become stagnant, trapped in cognitive "doom loops" that reinforce indoctrinated and ritualized content while preventing any development or experimentation beyond familiar ground. *Reflective practice* means that a society is cognitively flexible enough to critically examine, question, and challenge existing frames, including on war itself. It is not enough to attempt to refine military behaviors and performances so that they are optimized to some pure doctrinal or procedural compliance. We must also challenge our core institutional beliefs and invest time and energy

into whether tomorrow's paradigm shift might present entirely novel conditions where all of yesterday's known assumptions no longer apply.

Humans define modernity in specific ways that, if not reflected on with a systemic view toward the past, tend to be ignored and therefore projected across all of human history and subsequently assumed to rationalize all future conflict as well.[10] Modern, scientifically rational societies position the human as the central orchestrator, decision maker, and controller of all aspects of warfare, also explaining war with respect to an enduring "nature" and a contextually dynamic "character." Yet, this is only relevant to the last five centuries or less, particularly within a Western, Westphalian perspective.[11] Prior to this modern framing of organized violence, previous generations placed the orchestration and grand control of all things in reality, including wars, not in human hands but in divine or mythical ones. Despite this being how our collective past understood conflict and organized violence, we are now moving quickly toward a future where, once again, humans may no longer be in control of all war nor be able to conceptualize organized violence in any meaningful way at this new, emergent level of complexity.[12]

While such a provocative statement may initially seem to border on the absurd, this article will outline the core argument that war is first and foremost a social construction generated by our species, and that the tremendous creativity and potential of humanity carries with it the seeds of its own technological eclipse. In other words, past societies put the tool for war in the hand of the human soldier, yet those armies on premodern battlefields looked upward to divine authority and control for whether those tools of war would strike true. Modern societies pair the war tool with the human decision maker, rationalized scientifically and analytically, and set

within a Newtonian-style framework on how and why conflict manifests in form and function. Future war has clear trajectories in which new, technologically advanced war tools will be capable of redesigning their own ends beyond the original intent of human creators, and likely beyond our ability to comprehend or sustain progress therein.[13] Even more shockingly, we might not realize whether we are under the protection of superior defensive capabilities, imprisoned by them, or possibly under existential threat. Along the way, we will continue to disrupt the previously clear barrier between what is real and what is not, where the social reality we curate in our collective minds becomes blurred across physical and virtual realities. Our future tools of war may become far more than just tools, but something that redefines conflict itself.[14] Reflecting on this now while we still may is essential, as farther down the road we may realize we no longer can.

Moving to the Ultimate Abstraction on War: Why Do We Believe Conflict Is as Such?

Reflective practice questions why we do as we do, so that we might begin to examine what we are unwilling to consider beyond such limits and whether our current processes and beliefs are relevant for the emerging complexity we are engaged within. This requires a quick immersion in what *emergence* means for complexity science and why earlier applications of the term are insufficient for what it really means. Complex systems are largely defined by emergent processes, which are never neatly arranged in linear-causal sequences in which ends, ways, and means might be preconfigured or predicted based on historical observations. If this sounds paradoxical, it likely is due to modern militaries using the term *emergence* either in earlier laymen

applications or, more likely, misapplying it to avoid questioning why we arrange causes and effects in formulaic, reverse-engineered, and static positions despite acknowledging that complex reality rarely permits such configurations.[15] Alarmingly, our grasp of this concept is often oversimplified or misinterpreted within contemporary security affairs and military organizations, particularly in modern doctrine and most training environments. Modern security organizations instead remain dependent on centuries-old theories and models that correspond to a Newtonian-style worldview—one that establishes cause and effect through analytical optimization and adherence to certain universal principles in which the subject-object relation is the default form in developing knowledge about the world, including war.[16] We might shoehorn *emergence* into our military language, but we retain a worldview that only appreciates nonemergent phenomenon and processes to occur in war.

In response to this charge, some military professionals might reason that we require more scientific thinking in updating how we understand war, or perhaps we should integrate complexity theory while attempting to remove or soften the mechanistic, positivistic thinking that defines modern military decision-making and doctrinal processes. *Positivism*, defined by the French philosopher Auguste Comte (1798–1857) as the rise of natural sciences and a scientific rather than theological or mythical manner of understanding reality, is centered epistemologically in how our modern military paradigm knows how reality is supposed to go. The shift from earlier feudal or premodern thinking to this modern, Newtonian positivistic thinking is defined as the rise of a "positive" mode of thought.[17] The emphasis on all major military constructs being modeled and theorized using natural science

content provides ample evidence of this positivism in modern war. Many of our otherwise unquestioned models for explaining the foundational beliefs we carry on what war is often come from direct assimilation of natural science metaphoric devices, despite our institutions shedding the actual theory and content during the adaptation. "Centers of gravity" clearly come from physics, yet we abandon all the mathematical theorization underlying those constructs. "Principles" of war mimic physics, engineering, and Newtonian constructs further, despite also abandoning all the natural scientific logic.[18] We likely morphed our hierarchical arrangement of "levels of war" straight from geology, while our belief in an enduring "nature of war" is a clear demonstration of a positivistic epistemology generated by our military profession seeking the concrete, reductionistic findings of the scientific Enlightenment that propelled European society well ahead of all others.[19] Comte would combine deductive and inductive logic as the processes through which scientists could use reasoning and observation to generate analytically sound, orderly findings that could then be tested, refined, and incrementally curated so that a foundation for how and why societies functioned could grow in parallel to how mathematics, biology, physics, and astronomy had replaced earlier theological and mythical reasoning.[20]

Comte's influence would not go unnoticed within military theorists. J. F. C. Fuller, a twentieth-century British military writer and a veteran of World War I, would use Comte's positivism as a foundational logical underpinning of what a scientific foundation for war must include. He relied on Comte to argue: "[By] means of the inductive method we attain to science by collecting facts, by sorting these into categories, by extracting their values, and on these values erecting theories. By putting these theories to universal tests, by

degrees we can extract laws which form our working principles, our weights and measures of war."[21] Fuller's reliance on Comte's positivist ideas would shape many aspects of how modern militaries in the twentieth century would understand war using scientific rationalism and natural science constructs.[22] In the modernization of Western industrialized militaries acting as instruments of state power for the European, Westphalian-designed system of state entities, we have by and large adapted this positivistic, Newtonian-style perspective on organized violence.[23] This does not necessarily include all non-Western militaries, which hold to a combination of some modern, Western concepts yet may often draw from dissimilar social paradigms where Marxism or other philosophical difference supports another frame for explaining war.

Why do we insist on such a linear, mechanistic, and engineering-themed mode for understanding war? This again illustrates a Western, largely European and democratic state framework versus Eastern, Marxist, or other perspectives on conflict.[24] These Western military concepts were primarily adapted from natural sciences such as physics, biology, and chemistry and the field of engineering but rest on far older natural philosophy developed by ancient Greek and Roman thinkers, nested within an overarching framework of what one might identify as Western society, culture, and beliefs.[25] While most of the modern military worldview was developed during the last few centuries of rapid professionalization, industrialization, and modernization of warfare, this also built upon a well-established earlier framework of feudal and earlier belief systems concerning war.[26] The modernization of the military profession would seek new relevance by pursuing a scientific rendering of far earlier (prescientific) beliefs and behaviors for war. In a Newtonian-style world

of warfare, military practitioners explain reality mechanistically, correlating the objectivity and formulaic certitude of physics and chemistry with that of all wars past and future. Haridimos Tsoukas writes, "In the deterministic Newtonian world past and future play the same role . . . prediction is symmetrical with explanation."[27] Yet, today's complex reality features entirely new domains for human experience including war such as cyberspace and, increasingly, the celestial domain of space beyond near-earth orbit. Advances in quantum theory, artificial intelligence (AI), human-machine teaming, genetics, and more challenge most of the earlier illusions of orderliness found in Newtonian-style conflict theory.

This creates a cognitive crisis for the modern military profession of Western industrialized societies. Our primary belief system or social paradigm for defining what war is and how one wages it is firmly established within a Newtonian world, not one addressing complexity science or other twentieth-century developments.[28] We essentially reject or deny alternative social paradigms that define war as irrelevant or inferior to our own, meaning that anything considered "new" must pass our own standards for integration with all existing beliefs, values, and our military culture. While this particular way of framing human conflict is rationalized within our social paradigm so that it seems most useful and practical in a scientific manner in keeping with Newtonian stylization, it paradoxically shuts us off from bringing in from beyond these paradigmatic limits anything new that challenges the institutional rules and norms.[29] Anything new in war must be indoctrinated if it seems useful, but only through a laborious, byzantine process in which the new must uphold the established tenets and core theories and beliefs.

Modern military usage of emergence is both limited and used exclusively in empirical applications, such as when a change in a conflict begins to be realized or detected. Indeed, the recent cornerstone U.S. Army doctrine *Planning and Orders Production* (Field Manual 5-0) and *Operations* (Field Manual 3-0) each mention the term *emerge* a mere handful of times and only in the general parlance not of complexity science but of Newtonian stylizations or earlier ascientific rationalizations that entirely miss why complexity science distinguishes the term from linear or even nonlinear concepts.[30] The term *emergence* does not appear in either publication, which constitute more than 680 pages of military theory, models, and methods central to how the U.S. Army understands and executes warfare. While doctrine writers might protest this charge, most complexity scientists would agree that within these pages that ultimately inspire and lead nearly all other U.S. Department of Defense military branches and also the Western world accordingly, there is no complexity science at all.[31] Even the few terms sprinkled across those publications that likely came from complexity science inspiration have been assimilated into the older Newtonian stylization that explains how modern militaries understand and act in war today. Complex reality is denied, or it is magically frozen in time for leaders and staffs to subsequently pick apart and reassemble using the cognitive tools first applied to natural sciences several centuries ago. Such thinking not only sidesteps complexity but also forces practitioners to ignore emergence as it occurs around them in complex, dynamic conflict settings.

When emergence occurs in any complex system, one experiences not a linear-causal dynamic but one where an effect is observed that has no apparent cause, such as AI speaking in a new foreign language that it was

never programmed to do. As another example, consider how the rise of steam power forced humans for the first time to invent time zones, or how large cities that for decades managed peak traffic periods with strict taxi licensing limits now struggle with ride-sharing apps that were made possible by the development of the smartphone. Emergent processes are paradoxical in that they are part of the known system and at the same time are not part of the system at all.[32] They arise out of known, fundamental, or existing entities yet themselves must be novel and cannot be reduced or analyzed so that the fundamental components are found inside. In other words, no one realized society needed a concept of time zones until complex reality transformed into a future in which such an idea became necessary. Emergence is also user-dependent, meaning that many different observers experience many different descriptions, suggesting that complexity is both part of the real world and also socially constructed, making any mathematical or analytical (linear, formulaic, reducible) approach incomplete or irrelevant.[33] Emergence is rife with paradox, causing a staggering level of confusion for militaries expecting an orderly, stable reality that reinforces an institutional desire for a Newtonian-style world. Indeed, security forces approach complex conflicts with often the wrong conceptual tools and language that miss emergence entirely. We crave control, to include the singular mindset that every military activity begins with a predetermined future objective or goal that must be reverse-engineered in linear-causal logic to the present.[34] A plus B must lead to C, since we have a strong historic pattern of C being accomplished by combining A with B.

Emergence as a concept in complexity science is introduced so that readers can consider how modern military organizations are largely unaware

or unwilling to incorporate it into theories and practices for warfare. Without realizing what emergence actually is and that complexity does not link effects to causes in some purely linear, incremental, and sequential manner, military professionals might continue to insist that war has an enduring "nature" that is unchanging and universal in some formulaic structuring of laws and principles.[35] This again is a Newtonian-inspired view that gained dominance before complexity science developed, built upon far earlier concepts in Ancient Greek philosophy.[36] Outside the modern, Western military institution, many nonmilitary fields, disciplines, and industries acknowledge complexity science and employ modern strategy concepts such as scenario planning, multiple futures, and other approaches that would entirely conflict with our preferred casual, linear "ends-ways-means" process of framing a single desired future state and reverse-engineering our way toward it.[37] We typically lack the institutional flexibility to consider outside our narrow framework for linking thought to action in modern warfare.[38]

If war is framed exclusively in the Newtonian stylization, future wars must continue to obey particular natural orders and laws, while the "characterization" of warfare might shift with the times, culture, technology, geography, and economic conditions of one context or another.[39] This article makes a difficult, if not impossible, attempt to provide a summarization of all war philosophy and theory so far in human history and to offer conjecture on how and why war may change due to profound technological change that is disruptive enough to entirely transform much of our social reality. One useful example in history is the invention of the Gutenberg moveable printing press and how it radically transformed European society—and, subsequently, the entire world—while another is the cognitive revolution that occurred in

humans some 70,000–30,000 years ago, when our ancestors first began to produce abstract thought, including the ability to imagine things that only exist within our own minds.[40] The systemic tension here is one of competing belief systems on what war ultimately is (and is not). War in a Newtonian framing is timeless, enduring, and external to humanity by design, akin to natural forces such as gravity or chemical reactions. Or war is a purely social construct that in exercise produces tangible results in physical reality yet cannot ever be analyzed using the aforementioned Newtonian stylization. These two differing war paradigms represent competing interpretations of what reality is (and is not), and the Newtonian frame dominance for the last five centuries might no longer be as valuable as previously thought.

Modern war, in terms of how we conceptualize it, is unlike earlier belief systems concerning social reality and war. Early civilizations placed control of the battlefield not at the hands of human generals but in the divine fate of deities, spirits, and other supernatural designs. This continued well into the feudal age, when powerful hierarchies and bureaucracies such as the church and feudal autocratic arrangements maintained a rigid class system. Modern societies, whether Western industrialized and Westphalian or Marxist versions drawing from alternative social paradigms, position humanity central to how war occurs and who controls it. Technology has perpetually been a most valuable tool for early societies to attempt to please deities, spirits, or oracles to win favor on the battlefield and within modernity the primary vehicle for enabling a vast expansion of military capability, capacity, and lethality. Yet, future war may become once more a form of organized violence beyond our direct awareness or control, this time due to our own technological advancements instead of earlier belief systems and

mythological frameworks. In other words, all previous weapons were created with clear means to ends of our design. Future weapons may have the ability to redesign their own ends, outside and beyond our cognitive ability to monitor or control. The earlier spiritual phantasms of war may return in technologically advanced forms that entirely redesign social reality and what organized violence between humans means. The oldest war paradigms in which deities and spirits controlled and thereby provided ample rationalization on what war was are collectively rejected by most today, yet the same ideological devotion now extends into contemporary "scientific" beliefs on war. We expect the future to remain wedded to this current war paradigm, while we categorically reject alternative frames that force us to potentially give this Newtonian war paradigm up as we once needed to do with the prescientific one.

The First Rule of Modern War Paradigms Is that One Does not Talk about This Paradigm

Humans waged war through the antiquities and into feudal age contexts in which wars were often limited, ritualized, and associated with prescientific renderings of reality through either a Greek-inspired natural philosophy or an ancient Chinese one, among others.[41] With the rise of scientific thinking in Europe several centuries ago, Western societies surged ahead of all other rivals in a burst of technological, economic, and informational development that upset the earlier prescientific ordering of the premodern world. Multiple Western war theorists would reinterpret war in scientifically inspired ways, to include formulas, laws, principles, geometric models, and an insistence on deductive and inductive logics.[42] War would move toward new Westphalian

nation-state ideals, with the Napoleonic era of warfare ushering in a "total war" construct that would increasingly devastate societies, departing from earlier limited and rather ritualized forms of warfare. Later still, war would transform in the Nuclear Age, when the "total war" construct required new modes of deterrence to ensure species survival.[43]

This transformation was first proposed by James E. King Jr. and developed by U.S. Navy rear admiral Henry E. Eccles, an influential Naval War College professor and strategist in the 1940s through 1970s.[44] Examining the rise of nuclear peer adversaries between the United States and the Soviet Union in what became defined as the Cold War, King and Eccles suggested that all conflict prior to the late 1940s had no artificial stopping point or existential deterrence factor, so concepts such as Clausewitzian "absolute war" ideal could be sought in any conflict by either side, such as the runaway offensive strategies that eventually bled European nations white in World War I. All war up until the Nuclear Age manifested within some form of a limited conflict, but any could surge into as close in proximity to "absolute war" as desired without the existential risks to humanity or the modern world as we know it. Eccles would posit that only in the Nuclear Age did nuclear-armed or affiliated nations position multiple limited conflicts while seeking strategic advantage within an overarching strategy of nuclear deterrence. However, each side had to now accept greater tactical defeats in limited wars if such actions prevented escalation into a possible nuclear conflict.

For any other period of war, a military decision maker could always choose to increase the level of devastation and destruction to whatever upper limit they had the operational and logistical capacity to inflict. Since the dawn of the Nuclear Age, societies are all artificially regulated, if only to prevent

such an increase from provoking existential crisis in nuclear exchanges. All societies accept this, regardless of politics, culture, beliefs, and geography—nuclear Armageddon cannot be ignored. King, cited by Eccles, wrote about this in 1957: "Moreover, we must be prepared to fight limited actions ourselves, otherwise we shall have made no advance beyond 'massive retaliation' which tied our hands in conflicts involving less than our survival. And we must be prepared to lose limited actions."[45] Such conditions remain today and extend as the proliferation of nuclear weapon technology becomes increasingly easier for other nations or rogue actors to attempt to gain. The additional strategic burden of a nuclear "existential deterrence factor" for contemporary civilization may soon be joined with parallel developments concerning the space domain, and theoretically for artificial general intelligence (AGI)—fears of a "singleton arms race" in which nations trying to reach advanced (and weaponized) intelligence first might trigger uncontrollable, even existential consequences.[46]

Today, societies still face the potentiality that the next war might feature aspects of the Napoleonic-inspired and Clausewitzian-defined "absolute war," or that of what is arguably termed *asymmetric war*, *irregular warfare*, or *hybrid war* in attempts to define those conflicts that do not neatly match the Westphalian-, Napoleonic-, and Newtonian-style conflicts familiar for centuries. As Newtonian stylization emphasizes a static, orderly, linear reality, we must shift military thinking to how emergence in complexity science is largely absent from contemporary military thought and doctrine. Due to our fixation on a strictly Newtonian, Clausewitzian, and Westphalian framing of war, we are increasingly vulnerable to how conflict may shift into new and dynamic configurations that exceed these theoretical limits.[47] Along

with this domination of a natural science-inspired framework for understanding war outside of complexity science, contemporary militaries also reject sociological arguments of a complex, human-designed, and human-constructed reality that sits atop an already complex natural world. It is in the fusion of these two overlooked or discounted constructs that a new potential form of war might be realized and considered in abstraction—that of a *phantasmal war*. The phantasmal war does not replace any existing war theories or models but enhances and extends beyond them in specific, technological, and often hypothetical contexts as of today's configuration of what exists versus what is around the corner. Teetering between the theoretical and the hypothetical, this concept of phantasmal war may be emerging today to join both the earlier "total war" and "irregular war" constructs in an ever-expanding complex reality for our species.

A phantasmal war differs from orthodox and unorthodox (regular and irregular, symmetric and asymmetric, conventional and unconventional) war in an emergent and distinct way. While the Newtonian stylization for war requires operators to assume that war existed in some natural state before people first waged war and likewise will endure beyond humanity, readers must recognize and step beyond this construct so that the phantasmal war concept may become feasible. This article maintains a different perspective that war—like religion, art, love, and all other human-specific activities—is socially constructed and only exists provided that the human species collectively maintains and exercises the notion. Humans exercise war with real, objective manifestations in those tangible planes of reality in which bullets hit bodies and bombs destroy buildings full of people, but when humans imagine that war manifests in some natural scientific way such as

gravity or energy, they are conflating the objectivity of physical reality with their own socially constructed and entirely subjective beliefs about that objective reality. Peter L. Berger and Thomas Luckmann explain this with:

> In other words, there is no human nature in the sense of a biologically fixed substratum determining the variability of socio-cultural formations. There is only human nature in the sense of anthropological constants (for example, world-openness and plasticity of instinctual structure) that delimit and permit man's socio-cultural formations. . . . While it is possible to say that man has a nature, it is more significant to say that *man constructs his own nature*, or more simply, that *man produces himself*.[48]

John R. Searle provides a similar explanation on how humans typically exchange conceptualizations about reality that gain objectivity or subjectivity depending on how and why we are experiencing the world. Almost always, they weave together in exceedingly complex ways, and human bias toward a particular social paradigm or framework of beliefs on "what is real" frequently governs this interpretation. Searle posits:

> Epistemically speaking, "objective" and "subjective" are primarily predicates of judgments. We often speak of judgements as being "subjective" when we mean that their truth or falsity cannot be settled "objectively," because the truth or falsity is not a simple matter of fact but depends on certain attitudes, feelings, and points of view of the makers and the hearers of the judgement.[49]

Reading this, one might wonder, "What is war as I know it, and why might I feel so strongly about these things?" If one adapts reflective practice, this could lead to many more questions that diverge outward, exploring what lies beyond institutionalized limits and barriers. Complex reality features a kaleidoscope of types of entities that relate either objectively or subjectively to our existence. Searle offers the example of mountains and physical pain, in which a mountain exists in an ontologically objective mode of "real" whereas "pains are subjective entities, because their mode of existence depends on being felt by subjects."[50] For readers uncomfortable with philosophy, this may all seem like a waste of time, but that typically is a justification by one's institution to retain the social paradigm with which the user currently agrees on how to make sense of reality. Essentially, one knows what war is because our war philosophy is a "settled matter," and any attempt to challenge our war frame is obnoxious to the self-preservation of that social paradigm collectively maintained by human users.

Phantasmal war requires first a departure from our contemporary modern war paradigm. Ancient societies waged war using the same physical organized violence as today's military forces, yet how they shared a collective understanding of what social reality was differed. Earlier societies positioned human actors as active pieces on the chessboard, inflicting violence through battles that were orchestrated ultimately by some divine or mythological power.[51] Although select elites such as princes, powerful clerics, or the administrators to oracles assumed the divine role of the tangible administrator of divine will, the collective rationalization of how and why wars unfolded and the outcomes of those wars carried a supernatural and often hazy explanation that could exceed human understanding. Astronomy and

astrology were joined together and used by most political and military leaders for thousands of years in harmony, despite contemporary rationalization that scientific fact should be distinct from mythological narratives and subjective opinions. This is an ontological assumption nested in our contemporary war paradigm that prioritizes objectivity above all, despite the Newtonian war paradigm that is itself grounded on an oversimplified version of social reality.[52]

The European Renaissance ushered in a new, scientifically rationalized world in which war need not be nested in divine explanations that could become phantasmal in how and why conflicts unfolded as they did. The placement of divine or supernatural power over war was replaced by capable human generals and military leaders who were entirely responsible for how war itself would occur. Clausewitzian scholar Beatrice Heuser summarizes this shift in which "nationalism replaced regnalism (loyalty to one's prince). For Carl von Clausewitz [and other war theorists in this period] the monarch was the mere representative of the nation, the incarnation of its honour and glory, but no longer the representative of God on earth as he had been thought of in previous times."[53] The phantasmal qualities of preindustrial, pre-Enlightenment Age conflicts would be replaced with both the Westphalian ontological assumptions of what a state was and how state systems wielded instruments of military power to engage in war and politics and the Newtonian-inspired stylization of social reality in which everything was pursued through objectivity, analysis, and universal scientific principles. Modern warfare remains a socially constructed framework of collective beliefs and values shared by users of a particular paradigm, one that has largely replaced the earlier divinely inspired one of antiquities.[54] Yet, this

current social construction is not necessarily the ultimate or last one for understanding conflict and organized violence.

Searle explains this social construction of reality by humans: "Something can be a mountain even if no one believes it is a mountain; something can be a molecule even if no one thinks anything at all about it. But for social facts, the attitude that we take toward the phenomenon is partly constitutive of the phenomenon."[55] What this means is that humans collectively can socially construct things that function entirely outside of any physically limited or regulated entities in the natural world. Or, as Searle offers, if "we give a big cocktail party, and invite everyone in Paris, and if things get out of hand, and it turns out that the casualty rate is greater than the Battle of Austerlitz—all the same, it is not a war; it is just one amazing cocktail party."[56] One's social paradigm informs a user what a war is and what a cocktail party is, and once we "know" something, that ontological certainty becomes difficult to challenge or adjust. The cocktail party remains what we know it only can be, even if it morphs into anything but a cocktail party. Similar things transpire in wars, especially when the way in which a conflict started becomes detached from what it has transformed into after chaos and disappointment over unrealized goals and objectives.

For thousands of years, humans generated a socially constructed idea of war that did not exist outside the species and was exercised in a wide range of societies and contexts where humans applied organized violence toward other humans.[57] Certainly, humans imagined that ants might go to war with another colony, or that a beehive would battle invading wasps in warlike metaphoric devices, but these conceptualizations were ways of explaining the world in ascientific or prescientific ways. No human city was ever surrounded

and sieged by invading howler monkeys, nor did a single military working dog ever suggest that the battalion operational picture of the environment was incorrect. Animals engage in violence, even organized violence, but they lack the sophistication and imagination to create such an idea as war.

Only humans (so far) can imagine what does not exist and will such a thing into the world, whether fantastic and beautiful, such as the *Mona Lisa*, or devastating and terrifying, such as the atomic bomb. But throughout human history, different groups in diverse locations, contexts, and dissimilar or competing belief systems would socially construct a wide range of definitions for war, rules for warfare, and explanations for why humans needed such a violent construct. A strange side effect of the social construction of war is that successful application of one war paradigm often reinforces it, expands it, and inspires those that suffered from it to either adapt it entirely or seek to conceptualize a new competing war paradigm that exploits vulnerabilities in the dominant war frame. T. E. Lawrence, despite coming from a modern British military organization oriented on a Clausewitzian- and Jominian-framed and Western-defined mode of "modern/total warfare," would develop irregular war theory so that poorly trained and equipped Arab natives could defeat the Turks who continued to pursue the modern, Western logic for war in World War I.[58]

Lawrence, however, still operated in the modern war paradigm sustained across the Western, industrialized, and largely European world where he understood war as an enduring, even natural process required of any state pursuing self-interests in a system of competing states. Lawrence deviated from the strategic and operational tenets espoused in Napoleonic-era warfare that were extended into the twentieth century, moving in

directions that other military leaders and theorists such as Vladimir Lenin, Mao Zedong, and Võ Nguyên Giáp would embrace as "political war." Yet, Marxists differed from the Westphalian, Clausewitzian, and Newtonian collective by using another social paradigm, and Lawrence was hardly a Marxist.[59]

Whether one group believed in war differently than the other was secondary to the acknowledgement that war was occurring, and one group would succeed or fail. The Zulu Kingdom managed a costly battlefield victory using spears against the rifled-equipped British Empire at the Battle of Isandlwana (1879). The Viet Cong, operating under a Sino-Marxist political war theory, waged a lengthy insurgency campaign against French and then U.S. forces and the South Vietnamese during the First and Second Indochina Wars (1945–75).[60] The Viet Cong lost most tactical engagements and were frequently undermatched in resources, technology, skill, and lethality. But they defeated all overmatching adversaries within a "hot war" that occurred within the larger the Cold War between democracies and socialist regimes.[61] Virtually all contemporary debate on future warfare remains convergent and conventional in that the theories, models, and methodologies presented merely incorporate novelty such as cyberspace, the space domain, or emerging dynamics such as how space, cyber, and special operations synergize to accomplish alternative operations within the overarching bulwark of deterrence between nuclear capable competitors and various partners. We realize that new forms of warfare are now theoretically possible or already available in novel combinations that may exercise in emergent ways, such as a special operations covert operation using cyberspace and assets in orbit collectively. However, we dare not dream different beyond

assimilating the novel into a human-designed, controlled, and wittingly executed and experienced form of organized violence that still meets all historical precedence.

The same can be said of the Taliban in Afghanistan, radical Islamic terror groups in the 1990s through today, or the Polish horse cavalry charges against German mechanized forces in World War II. Beliefs about warfare differed, yet collectively the human actors involved in all conflicts were witting (although not always willing) participants in war that they understood as conflict despite sociological differences in defining it. Even when all participants acknowledge that war is occurring, various groups still might believe that how warfare is waged and what war itself means can differ. Anatol Rapoport, in explaining the interplay between pacifism and war, details how the Danish people in World War II engaged in "civil defense," in which one engages with military aggression (war) by nonmilitary means: "Civilian defense is based on a conviction that a population can be induced to refuse to obey."[62] Whereas Clausewitz's central position in defining war declared the destruction of an enemy's armed forces as the means to use acts of violence to compel an adversary to submit to our will, the Danish society did not agree to this construct. Instead, they collectively used nonviolent methods to resist the Nazi occupiers throughout the conflict, rarely acting violently yet never agreeing to defeat.[63] The key point offered here is that despite various stakeholders or groups holding incommensurate or paradoxical ontologies (what war is) or epistemologies (how we know about conducting warfare) concerning war, they all comprehended the organized violence ensuing around them. Until now, all wars could be experienced by all even if conceptualized dissimilarly as they unfolded.

Phantasmal wars do not feature these same shared conceptualizations, awareness, or clear human defined qualities of beginning, middle, and end. Just as a phantasm or "apparitional experience" in parapsychology features an entity (living or inanimate) without any material stimulation or reason for such a perception, a phantasmal war would occur in a variety of ways that are inaccessible or potentially inconceivable to the participants within that conflict. This article started with the bold declaration that humans created war. What this establishes is the social construction of a reality that our species designs, maintains, and extends to the next generation so that the natural world continues to have human activities occur within it; and yet those activities cannot be explained without realizing the collective concepts held by humans outside that physical reality. War, whether one frames it through the theories of Clausewitz, Antoine-Henri Jomini, Karl Marx, Sun Tzu, or any other source, is conceptualized within the confines of how humans can understand complex reality. Yet, once we create new intelligence that is unbounded by our cognitive (resting on biological and physical) limitations, we must contemplate war previously unimagined. In other words, all previous war had to be socially produced so that humans might wage it; yet this pathway is building a different on-ramp that we cannot access. Our social construction of reality is human, meaning that all wars so far have been human designed. Berger and Luckmann explain this:

> The most general answer to this question is that social order is a human product, or more precisely, an ongoing human production. It is produced by man during his ongoing externalization. Social order is not biologically given or derived from any biological *data* in its empirical manifestations. Social order, needless to add, is also not given in man's

natural environment, though particular features of this may be factors in determining certain features of a social order (for example, its economic or technological arrangements). Social order is not part of the "nature of things," and it cannot be derived from the "laws of nature." Social order exists *only* as a product of human activity. No other ontological status may be ascribed to it without hopelessly obfuscating its empirical manifestations. Both in its genesis (social order is the result of past human activity) and its existence in any instant of time (social order exists only and insofar as human activity continues to produce it) it is a human product.[64]

What this means for how our species understands all past wars and anticipates the future form and function of all possible emerging conflicts is that our own abilities and limitations to conceptualize will govern what war we can understand and what war we likely cannot. To posit that war is a human production requires most readers to temporarily discount the notion that war is part of some natural ordering of reality that extends beyond humans, such as the laws of physics, chemistry, or organic life. Regardless of what one believes or assumes is simply gibberish, the proposal of a phantasmic manifestation of war can only be articulated if we contemplate both the emergence of nonhuman consciousness with suprahuman abilities, as well as the social production of constructs such as war, love, beauty, art, religion, and other decidedly original human activities that only exercise effects and consequences within what we perceive as physical reality.

Introduced earlier, the notion that humanity for much of our collective history conceptualized war differently than we do today requires further

examination. War being first a social construct that is manifested through physical effects, we previously held prescientific or perhaps ascientific rationalizations explaining the "why" of conflicts. Premodern war was potentially expansive enough that part of our adaptation of a Westphalian, nation-centric framework to define conflict in a modern, Newtonian configuration is that "what war is" became far more structured and clearer, and "what war is not" equally redefined, so that only specific organized violence that involved necessary state instruments of power and that was set within an international state system of competition became the accepted framework for conflict. Wars had established rules, processes, and rituals and became a natural, ordered aspect of how societies would resolve differences when diplomacy, economics, or other nonviolent activities were insufficient. Peace in premodern society was largely an alien concept, something merely to label periods between conflicts and once more associated with divine or supernatural orchestration. Peace in modernity is a declared, intentional, and controlled outcome of how multiple states and an international community successfully organize and communicate to achieve deterrence or mitigate how widespread a conflict might expand. Modernity equates peace with successful debates between various conflicting groups that stem or prevent organized violence.[65] These may radically shift in future conflict due to the ways in which new developments in technology will alter both how humans understand social reality that includes conflict and whether new systems intended to prevent conflict or successfully win in war might change the meanings of human-defined "war" and "peace" beyond current and historic contexts.

Again, throughout the history of human conflict, only humans have engaged in said conflict while comprehending that they were in said conflict.[66] We are now standing on the edge of something quite different, where artificial creations can introduce both purely different intelligent entities (AGI) that can acknowledge that they too are involved in war and potentially some transhumanist evolution of *homo sapiens* into a being that is enhanced beyond what the original species is capable of contemplating.[67] This new door swings only one way for humanity, in that these new actors to the stage can grasp how we conceptualize and socially construct war, but we may not be able to peer into their different world to understand what they might construct differently. All of this will exist above and beyond any "nature of things" or dependence on the "laws of nature," as Berger and Luckmann explained previously.

The idea of a phantasmal war is disconcerting, as it suggests that the same species that brought war into reality may no longer have a clear control over it, or even direct awareness or the ability to wittingly engage in the exercise of organizational violence. This radical concept can be illuminated by a host of technological and sociological constructs that are already on either a theoretical or, for more radical concepts, hypothetical horizon for future conflicts. To appreciate how the phantasmal war concept might come into existence and occur in the same reality that already features conventional and unconventional warfare, military theorists must appreciate how complexity science requires new ways of thinking and also the abandonment of previously cherished theories, models, metaphors, and beliefs. First, readers should consider emergence with respect to how humans understood war until recently, which is summarized below. Otherwise, militaries will

unwittingly continue to render complex reality into clear patterns of inputs and outputs, routinized so that one might freeze the system and reduce it for analysis, determine formulaic rules, and then "formally represent them in an abbreviated explanatory-cum-predictive formula" in which future strategic goals are reverse-engineered in planning for checklist-style execution in a mindset that entirely discounts emergence in complex systems.[68]

Radical, system-wide emergence represents the most disruptive and transformative processes where social reality undergoes powerful change. The rise of organic life on this planet, the replacement of dinosaurs with warm-blooded mammals 65 million years ago, and the invention of the Johannes Gutenberg printing press are a few examples. Within our reach, humanity should become the first species from this planet able to become multiplanetary and escape the otherwise fragile status of being a single-celestial vulnerability to periodic extinction-level consequences. Humanity may create artificial life that exceeds our own cognitive capabilities. The development of sufficiently advanced quantum computing may unlock other radical transformations that change social reality in profound, revolutionary ways.[69] Emergence in complex, dynamic systems runs contrary to the stable, ordered Newtonian universe on which our military paradigm and all associated theory, doctrine, and methods are based.[70] Put plainly, we assume that modernity "solves" all major philosophical, moral, and ethical issues concerning war, in that while we cannot stop organized violence outright, modern state frameworks and internationally shared beliefs (ontological, epistemological, and methodological) are the best available modes of regulating human conflict. The universal applications on how these Newtonian-style assumptions explain our social reality makes us prefer one

definition concerning what war is, and we apply it forward and backward across all time and space. Yet, this limits us in considering systemically how our species used to understand conflict, and it potentially blinds us to where conflict may shift into manifestations that violate these scientifically rationalized tenets.

Total Wars in a Westphalian Reality until Humans Split the Atom

War has not always been in keeping with modern understanding and usage of the terms involved. In ancient times, Western and Eastern societies pursued natural philosophies, collective experimentation, and prescientific modes of knowledge management to produce diverse theories of war. Often different societies and cultures generated contextually or geopolitically specific rules and practices for warfare, coupled with the rich social context in which battles in one region in one century may be quite different from others in different times or locales.[71] Nobility and mythology created conditions in which elites could claim special jurisdiction to lead armies and wage wars, yet often such violent affairs would amount to not more than "a handful of days in actual combat. Much of the largest part of the season was always taken up by something best described as a mixture of tourism and large-scale robbery."[72] Armies filled with conscripts were temporary and assembled only after a definitive issue had arisen, with wars arranged somewhat in compliance with the seasons and the demands for agriculture.[73] This would generally cover most all recorded human history excluding the last few centuries. War has always been destructive and often brutally violent, even for innocent civilians, throughout the ages.[74] At times, feudal societies did feature some limited and particularly ritualized phases of war, yet throughout

recorded history across every inhabited space, our species has flourished and faltered with perpetual applications of organized violence.[75]

Wars entered a new scientific age of development and expansion soon after the European Age of Enlightenment and the adaptation of scientific thinking for military affairs. Previous armies struggled with logistics and human capital, often relegating campaigns to certain seasons or orienting them toward specific ideological, political, or geographical goals. War was less frequently "total," though annihilation did occur in terrifying effect. Essentially, making war at increasing scale or distance was expensive and risky until technological and societal changes presented new possibilities. Further, European societies would also shift somewhat away from the ideological and often ritualistic forms of earlier warfare nested in some fulfillment of religious or moral duty, the aspirations of some *eschatological* (end-of-world prophesized battle) texts, and notions of chivalry and fixed rules of battle.[76] Westphalian nation-states would become associated as entities with rights just as individuals might have, where a nation would be defined by geographic borders and territory, a shared language and history, and the right to declare war and defend oneself from rivals. Wars would become larger in scale and scope, resulting in the Napoleonic era of "total war" initiatives in which entire nations were mobilized across their industry, population, and policy makers into a giant war machine. Survival of the nation (people, culture, identity) would become paired with more extreme applications of war, where an "all-or-nothing" mindset began to weave with nationalism, racism, and rising geopolitical tensions often in a zero-sum deadly game of death and destruction.[77]

Clausewitz would theorize on Napoleon's successes by positing that war could be understood in the framings of ancient Greek philosophers, modernized with a fusion of natural science and Kantian ideas on an elusive or impossible to fully comprehend reality with German Romanticism.[78] For Clausewitz, modern nation-states were scaled extensions of Hobbesian individuals, where war was considered not just a necessary and ever-occurring rational activity but often something positive for society writ large.[79] This nuanced with Jomini and his more rigid analysis that all war could be reduced into general principles and rules for the clever leader to outwit and defeat opponents with.[80]

However, for Clausewitz, Jomini, and their contemporaries studying war in the wake of the Napoleonic era, the "ideal" war is a pure, total, and perfect manifestation, while due to the fog and friction of human behaviors both collectively and individually within an ever-changing world, only the "real" wars might materialize.[81] Real war spanned from nations suppressing insurrections and insurgencies to that of near-total state warfare that would be demonstrated with increasing devastation in the two world wars of the twentieth century. Then, the detonation of two atomic bombs over Japan would end World War II and usher in a new period of limited war under threat of nuclear annihilation. War continued, but now these Westphalian nations faced the first context in which the species might destroy entire domains such as land, air, and sea along with entire societies locked in a struggle. Rapoport declared this as the end of Clausewitzian war logic, in that nuclear destruction could not demonstrate any winner in the earlier conceptualization of Napoleonic nation-state warfare.[82] But the Newtonian stylization of war would continue, remaining deeply entrenched in war doctrines and decision-

making methodologies to this day despite minority theorists bucking the Clausewitzian tides.
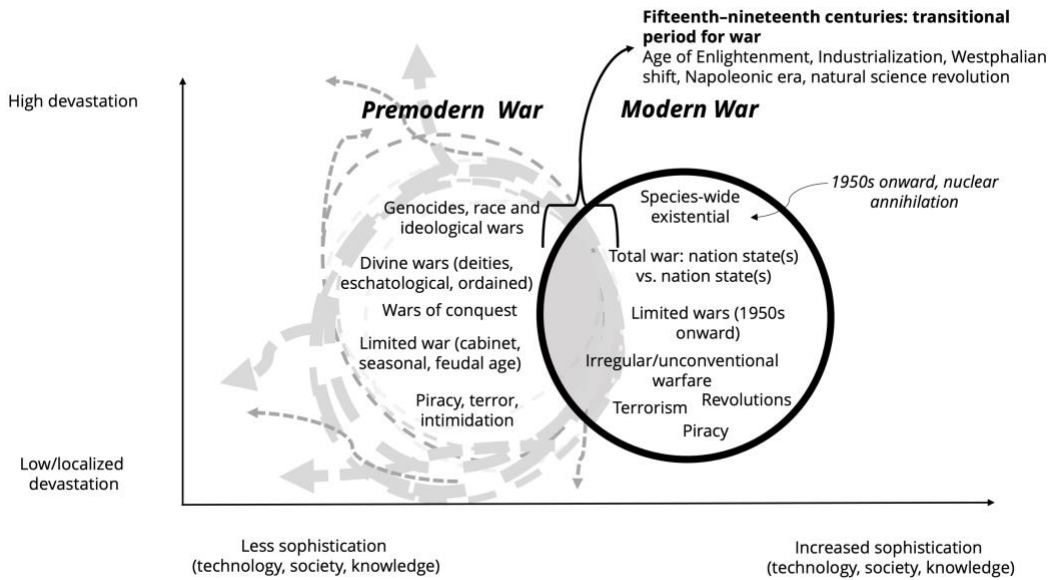
Although a deep study on Clausewitzian war theorization as the cornerstone of the modern war paradigm demands multiple chapters if not books to fully unpack, Clausewitz the idealist presented war as the primary means to decisively resolve state differences when political compromise was impossible.[83] War must be violent and bloody, and only in actual battle could organized violence accomplish what the military instrument of power existed for. States were locked in perpetual competition, war was as natural an activity as peace between nations, and once war occurred the military's only goal was to annihilate the enemy armed forces in a major battle or series of large engagements.[84] There is no victory without violent, large-scale battle, and the adversary's will must be crushed. Clausewitz would differ greatly from the mechanistic, principle-based war theorists such as Jomini, Raimondo Montecuccoli, Dietrich Heinrich von Bülow, or Sébastien Le Prestre du Vauban.

Consequently, Clausewitz is unique within the contemporary Newtonian war paradigm in how he presents the best elements of Enlightenment thinking and the modernization of war, particularly in the Napoleonic era, and additionally, unlike most of his contemporaries, the infusion of German Idealism and German Romanticism, moving his ideas in later years much further from the highly objective war concepts found with Jomini, Bülow, or Montecuccoli. Peter Paret, in particular, analyzes Clausewitz's body of writing and uncompleted revisions of *On War* to identify a realist and idealist interaction in his attempts to explain war.[85] Clausewitz would from an early age believe that history, through scientific rationalism,

"could illuminate the timeless forces in politics and war, and only in history could be found the key to the meaning of each particular detail, both past and present."[86] Yet, he would remain centered in this Newtonian-style, modern paradigm for defining war as a state-based activity, cast with an enduring nature and a changing character and orchestrated by humans against other human beings. His interpretation of war through the Napoleonic era he witnessed would provide the rationalization for conflict up through the end of World War II.[87]

During the Nuclear Age, nations would assume greater tolerance for tactical defeat if this maintained nuclear deterrence and prevented terrestrial domain and societal obliteration.[88] Considering the long wars in Afghanistan of the Soviet Union and later the United States as well as the U.S. war in Vietnam, the second half of the twentieth century is full of limited conflicts and operational failures due to overarching concerns on nuclear deterrence. The ultimate weapon to destroy an enemy totally was reached, but proliferated to produce an emergent reality where not using the weapon is more powerful than risking its application. Due to existential threats to both competitors, wars would shift to irregular and hybrid options so that deterrence could prevent potential species extinction.

Figure 1. Premodern to modern war paradigms

Figure elements:
- High devastation (top of vertical axis)
- Low/localized devastation (bottom of vertical axis)
- Less sophistication (technology, society, knowledge) (left of horizontal axis)
- Increased sophistication (technology, society, knowledge) (right of horizontal axis)

Premodern War
- Genocides, race and ideological wars
- Divine wars (deities, eschatological, ordained)
- Wars of conquest
- Limited war (cabinet, seasonal, feudal age)
- Piracy, terror, intimidation

Fifteenth–nineteenth centuries: transitional period for war
Age of Enlightenment, Industrialization, Westphalian shift, Napoleonic era, natural science revolution

Modern War
- *1950s onward, nuclear annihilation*
- Species-wide existential
- Total war: nation state(s) vs. nation state(s)
- Limited wars (1950s onward)
- Irregular/unconventional warfare
- Terrorism   Revolutions
- Piracy

Source: courtesy of the author, adapted by MCUP.

Figure 1 provides one of many possible ways to systemically frame an expansion from earlier, premodern war frames toward a more expansive war paradigm that includes modernity. Readers should remember that war, as a human design and social construction, can include any number of hybridizations and variations of anything depicted in premodern and modern war occurrences. This figure should be considered with a high degree of abstraction, in that "devastation" and "sophistication" are broad and particularly incomplete when considering the wide panoply of human designed conflicts so far recorded. However, premodern war is often associated with ascientific combinations of ideological, societal, cultural, and ritualized frameworks for what war could be and how warfare might be waged, as well as tied to a lower sophistication of technology, collective knowledge, and the societies involved. This is depicted on the left side of

figure 1, where genocides and racial or ideological wars often were highly devastating to the populations involved.[89] Many premodern conflicts were conducted by military leaders who believed ontologically that a deity or deities controlled the outcomes of any battle, while in other contexts a war might be waged within strict and limited conditions assumed by both sides. Positioned at the low or localized level of devastation are acts of piracy, terrorism, and intimidation, although these activities might easily be considered at higher levels of death and destruction depending on the context.

The modern war paradigm depicted on the right side of figure 1 features a bold, solid border that represents the increased objectivity of natural science influences and advanced political and societal constructs associated with modernity. In the overlap between these two war paradigms, a gray section represents nearly five centuries of transformation, transition, and what unfolded in an uneven, nonlinear, and confusing series of events that would ultimately expand what humans understand as war into something contemporary and terrifying. Between the fifteenth and nineteenth centuries, Western societies particularly in Europe went through profound changes that would propel an otherwise insignificant population and region of the world into the dominant, and even overwhelming, force capable of a new and different war paradigm. This transformation occurred due to the European Age of Enlightenment and the rise of natural scientific thinking that would spark an industrial revolution. The political, social, and cultural shifts in how societies understood what it meant to be a country with geographic borders, a shared language and cultural history, and an existential

right to be a nation among nations would change how our species went about waging war.

The modern war paradigm in figure 1 positions "species-wide existential" as the ultimate threat of complete devastation that emerged in the 1950s and defined the start of the "Cold War" between nuclear superpowers. Until this point, our species had the penultimate ability to wipe out specific groups or populations and inflect catastrophic yet recoverable damage to the land, air, or sea. Nuclear annihilation meant that there were no more winners and losers, and no one side could impose their will on another if the planet was consumed in some nuclear holocaust. Below this, total wars not involving nuclear exchanges still represent high devastation and represent the modern desire to utterly and vividly destroy or eliminate a rival nation(s) or otherwise transform their form and function as a society. These represent both world wars and the perpetual threat of future wars that remain below a nuclear deterrence threshold. Modern war today, due to deterrence concerns, features a limited war phenomenon in which sides are apt to accept greater tactical defeats than before, if only to prevent escalation into nuclear war. Irregular and unconventional warfare along with revolutionary war and terrorism occupy the lower rungs of this hierarchy. However, just as in premodern war and piracy or terrorism, the contextual uniqueness of any conflict may reposition it higher or lower on the devastation scale depicted.

Many military theorists might reconceptualize figure 1 into some other arrangement and provide valid analysis based on better explaining premodern and modern war paradigms. However, figure 1 is the first of two figures in which phantasmal war theory is introduced. Readers might delay

judgment and consider how figure 2 is introduced later in this article. All three war paradigms appearing in this article ought to be considered collectively in a synthetic rather than an analytic mode of conceptualization. These concepts build on one another, and for the phantasmal concept to be properly introduced, some additional explanation is required.

Irregular War Transformed: Post-Westphalian and Post-Nuclear Organized Violence

Whether one prefers the term *irregular*, *asymmetric*, or *hybrid*, the distinction between these unorthodox conflicts and that of total wars are clearer since 1945 due to the emergence of nuclear weaponry and the absurdity of destroying the enemy's will to resist if all participants are obliterated in the victory. Irregular warfare has existed since the dawn of time and was arguably the first form of organized violence employed by various groups against rivals. The rise of the Westphalian nation-state delegated irregular warfare and nonstate aggressors to a lower position, and therefore by implication made state-on-state high-intensity warfare the optimal exercise of organized violence. But nuclear annihilation complicated what previously was an ever-escalating race for greater weaponry, effects, speed, and national focus of aggression against a clearly defined opponent pursuing similar aims. In the Nuclear Age, irregular warfare would again become the primary mode for conflict, particularly among competitors who had nuclear capabilities or were otherwise associated with nuclear powers. Modern, often termed *political* variations of irregular warfare inverted earlier Napoleonic, Westphalian, Newtonian war theory from a prioritization for decisive violence directed

toward the enemy's armies to that of education (or reeducation) of targeted populations first.[90]

Marxist theory, as a strong influence on modern irregular warfare, began as a counterposition to Western capitalism and liberal societies that prioritized individual liberties and freedoms while also enabling some at the expense of others. State Marxism materialized first not in highly industrial cities such as London, Berlin, or New York, as Marx and Friedrich Engels predicted, but in the largely agrarian and illiterate Russia. Lenin's successful revolution spawned multiple variations on the original Marxist themes, leading in the interwar period between the two world wars to a critical theory/social Marxist branch that began in the Frankfurt School in postwar Germany and in Asian adaptation of Marxist political war theory by Mao in China. Mao's integration of Marxism with Chinese rural peasantry and ancient Chinese culture and beliefs (Daoism and Confucianism instead of ancient Greek and Roman logics) would later inspire further modification of political war theory by Fidel Castro, Ho Chi Minh, and others seeking to reform the world through revolution.[91]

Education, according to Mao, was the primary focus for irregular warfare, or political war theory, followed by propaganda, and only then by fighting as necessary. Indeed, Marxist irregular warfare tolerated significant tactical defeats so that long-term gains might be accomplished in education and propaganda, an inversion of Clausewitzian war theory. The modern Western war frame favors direct, frontal engagement with the identification of problems and obstacles to preestablished goals. Robert C. H. Chia explains that Western methods for warfare seek to "face them head-on with the maximum concentration of effort, energy, and resources . . . and then

decisively eliminate or overcome them in the most expedient and efficient manner possible."[92] Irregular warfare, particularly Marxist political war theory and conflicts within the Nuclear Age, would present emergent developments in what war is and how it might be waged.

The Nuclear Age has ushered in several important developments that have complicated how war occurs. Since the 1950s, a growing elite population of nation-states have developed their own nuclear weaponry as both a defensive and offensive option, triggering international efforts to both contain the spread of nuclear proliferation to other nations or groups and to deter any act of nuclear attack that might produce existential consequences for all of humanity. Eccles, citing King, wrote in 1957 that a peculiar side effect of the Nuclear Age was that many nations were now willing to accept greater tactical defeat, pursue tightly limited actions, and otherwise perform the traditional blend of diplomacy and war with one hand tied behind one's back.[93] Arguably, the Nuclear Age coincided with and potentially enhanced the already developing irregular warfare pathway of modern nation-states in which one might accomplish various strategic goals covertly, through proxies, or even overtly, provided that said activities do not force an adversary to seek massive retaliation of a nuclear essence. The phantasmal war construct becomes a new game-changing development for this nuclear one with the arrival of the cyber and space domains.

While the space domain dates back originally to German rocket activities in World War II, it was not until the last few decades that space as a warfighting domain became not only a feasible consideration for future conflict but also, at the time of this writing, a clearly emerging juggernaut for space-capable nations concerned with security and diplomacy. Cyberspace

also dates back multiple decades, yet only in the last three decades has cyberwarfare taken on a pronounced and exquisite quality suggesting that, like space, cyber will continue to become more significant in future conflicts. In the last few years, strategists and operational planners from U.S. Special Operations Command (USSOCOM), U.S. Space Command (USSPACECOM), and U.S. Cyber Command (USCYBERCOM) have explored the combination or overlap of space, cyber, and special operations set within the existing nuclear deterrence framework of modern statecraft and diplomacy. Most of these discussions orient toward extending all existing military theory, models, and decision-making methodologies already established in Service and Joint doctrines so that new campaigns might be crafted that harness a space-cyber-special operations dynamic, potentially taking center stage over the traditional Service configurations and capabilities that were historically applied in the physical domains of land, air, and sea. Again, there is little new in these engagements beyond technological, tactical, and operational activities that remain adherent to nearly all existing practices, doctrine, and declared theories of war. Consequently, despite institution-wide calls for innovation and creative thinking for future wars that may not match previous ones, the U.S. military profession seems unwittingly devoted to retaining all legacy frameworks and beliefs, seeking to project on cyberspace, the space domain, and all future conflict configurations a static and unimaginative tone.

A New Interplay of Space, Cyberspace, Special Operations, and Complexity
The interplay between war in space, war in cyberspace, and war conducted in specialized (covert, clandestine, irregular, or unconventional) ways below the threshold of nuclear deterrence presents important areas to consider

phantasmal war theory. While much of the phantasmal war construct involves unwitting humans who lack the cognitive ability to realize different war concepts designed by either superior AI entities or transhuman beings who can function beyond naturally designed humans, some applications readily fall into phantasmal war actions through sophisticated technology and new warfighting domain configurations. Phantasmal war requires reflection on what war is and is not. War historically is understood as deliberate and violent action against an adversary to inflict pain, destruction, or death so that the opponent loses the ability to fight back and loses the will to resist. For nearly all human existence, war in myriad forms has occurred in the physical domains of land, sea, and, more recently, air. It has been exercised by humans against other humans and against the material properties and objects significant to the opponent's will or belief system. Yet, violence, destruction, and the tension between tangible and intangible may only grow more pronounced in future conflicts. Violence in a historic sense is paired with tangible reality, with effects clearly manifesting within the psyche of those actors affected by war in the social sense. But future war may manifest in greater proportion in nonphysical domains such as cyberspace, where "organized violence" becomes a nuanced and difficult concept to clearly articulate.

In the movie *Ready Player One*, an early scene depicts a futuristic Hong Kong businessman who loses all his valuable "loot" inside a virtual reality simulation in a winner-takes-all style of combat game. Viewers move from digital avatars battling it out inside the simulation to the consequences of that virtual reality in the actual physical world, where the businessman screams and yanks off his goggles. Suddenly, the man leaps up from his desk and runs

toward an office window in a high-rise building, only to be stopped from committing suicide by his coworkers.[94] Despite this scene being humorous and intended to show how deeply people in the actual world are integrated with the virtual world, it presents an important anecdote of what cyberspace and phantasmal war likely are moving toward. This also demonstrates how a social construction of reality is required to better synthesize an intangible warfighting domain such as cyberspace and extend similar considerations to the space domain, which has celestial qualities incompatible with terrestrial, classical physical domains for conflict.

Phantasmal war may occur entirely through cyberspace, directed by a combination of human actors and AI entities or systems, exercising via a space-to-ground or interlinked bridge between the human users in physical reality and within a virtual or augmented reality sustained within cyberspace. In other words, while not a single physical act of violence or destruction might occur, such a war would either destroy the individual or collective wills of a population or otherwise change or alter a shared belief system (social construction of reality) so that the designers of this phantasmal war accomplish strategic goals against an otherwise unwilling opponent.[95] All of this might occur phantasmally, where the target population is unwilling but also unwitting to the destructive actions of which they are a target. This concept therefore repositions defense entities such as USCYBERCOM and USSPACECOM and their related Services in unique roles that were historically occupied by the physical-domain Services and their respective combatant commands. It is already difficult to correlate geopolitical activities between what is done in cyberspace to clear targets and consequences in the physical world, in that many offensive activities routinely occur through cyberspace

that are not coordinated with any particular "battlespace owner" or the forces that might be responsible for the tangible artifacts and people where the cyber activity manifested. A phantasmal war in which the only violent activities manifest across intangible domains or the collective social construction of reality designed and maintained by populations of people within their individual minds is different than even the unconventional or irregular wars waged to topple a government, provoke a revolutionary war, or otherwise require tangible violence in a terrestrial domain.

The space domain also carries phantasmal qualities that are unlike the traditional physical domains. Space is massive, indeed infinite or best bounded by the technological limits of human exploration and exploitation. The scale and volume of space, along with how celestial mechanics differ from how humans understand reality and day-to-day life, require consideration. Much of this will be explained in the next section of this article on scale and complexity, but several key points revolve around how the space domain requires new theories on warfare, as well as that humanity will undergo deep ethical, moral, and legal challenges in how future wars involving an increasingly active space domain will produce novel challenges. This article has already explored how phantasmal war in cyberspace might bend (or break) many of the historical precedents on what we believe war to be and what it may become. For the vast reaches of space, even in the next several decades or the next century, our species should attain a multiplanetary status and begin to explore and exploit the inner solar system. The security requirements for such a massive expansion of human interests will create several phantasmal contexts.

Human operators can directly "drive" some satellites in orbits close enough to Earth that such actions transmit in a timely fashion, even against cunning adversaries also directing their own spacecraft. This will change when spacecraft are hours or days out of range. Future spacecraft, including weaponized ones, will rely on AI since humans will not be able to supervise or monitor them except at great distances. These AI systems will make decisions immediately on their own—reliant on preplanned contingencies designed by humans and programming coded by humans—and against autonomous rivals that may have different capabilities because their human designers differ ethically, morally, culturally, or politically. The phantasmal aspect here is twofold, in that two nations might create a war well before the physical conflict occurs. Human programmers, wittingly or perhaps unwittingly, will create some of the conditions on which the AI systems will draw from, and depending on the sophistication of that AI and the capabilities bestowed on the spacecraft, a war might have started well before the launch of either craft, potentially unbeknownst to the political leadership requesting that capability from a company or service.[96] When actual kinetic exchanges occur, such a conflict might happen in seconds, unfolding hundreds of thousands of miles from Earth, gradually reaching those nations well after the situation has been resolved.

Another important phantasmal quality of the space domain is the distance between nearly all humans and the far reaches of space where autonomous systems, including weaponized ones, can operate. Wars might begin and culminate in minutes or seconds, yet the distance and availability to that information creates new possibilities for national leaders and their militaries. It is nearly impossible to conduct even tactical operations on most

of the Earth due to how interconnected and technologically capable civilization is. This situational awareness steeply falls off the further one gets from the planet's surface. With increased speeds, the number of AI systems, distances in space, and other celestial and sociological considerations on how organic humans are cognitively limited compared to sophisticated machines, the space domain has a disruptive future for complex warfare unlike any historical norms.

Another phantasmal aspect is time, in that multiple autonomous systems might engage and subsequently resolve a conflict in nanoseconds, forcing human operators and decision makers to deal with only the consequences of such AI systems that could make such decisions in the absence of humans and whether those consequences ought to be shared with the public. Such examples of controlling information are not new, yet the space domain vastly expands the conditions for situational awareness and public narratives from terrestrial to celestial scales. The Stuxnet attack on Iran's nuclear program quickly became public knowledge, despite the origins of the virus to this day remaining obscure and demonstrating covert activities of some actor or state. Conflicts in the space domain could gain phantasmal qualities if one or multiple actors decline to acknowledge any warfighting activities, with the consequences of those actions inaccessible to planet-bound populations. The vast scale of the space domain is but one of multiple factors in how phantasmal war might exercise. To explain this further, we must understand why our strategies and operational plans retain a Newtonian-style, natural science-inspired framework for war that largely inhibits us from considering anything outside of a functionalist, Western mode of understanding conflict.

Scale and Complexity: Newtonian Frameworks Fail with Emergence

Until recently, war might be interpreted through a Western, ancient Greek logic of natural ordering and heroic action to reach abstracted goals or through an ancient Chinese alternative logic in which nonaction by anonymous or invisible war sages might usher in a natural flow of reality without fighting at all.[97] War could be explained in rigid mathematical formulas and geometry such as those used by Vauban and Jomini, in which generals could manipulate their army and the enemy as if winding a watch.[98] Clausewitz would combine natural science analysis with ancient Greek constructs of heroic action and desired ends but build further on this fusion with the ideas of German Romanticism that would pontificate about complexity in war blending chemical and biological metaphors with nation-states, armies, and populations.[99] A wave of countercapitalists led first by Marx and Engels and later by a series of Russian, Chinese, Vietnamese, Cuban, and other political revolutionaries would charter different war theory directions. Yet, in all these war theories, generated over thousands of years in vastly different times and cultures, all placed the human decision makers clearly in control of war.[100]

The Newtonian stylization of warfare occurred during the last several centuries, beginning with attempts by military theorists such as Vauban and later Jomini to render warfare into mathematical precision and geometric modeling so that battle could be predicted and controlled as if it were a mechanical watch.[101] Military theorists from Gerhard Johann David von Scharnhorst to his most famous pupil, Clausewitz, and many others would ground their war theorization on natural science inspiration and an ontology (what is real or is not) for war that itself oriented toward the objective

universal laws that govern the universe.[102] Fuller, during the interwar period, would comprehensively integrate Clausewitzian, Jominian, and Westphalian concepts into a positivist explanation of war—breaking things into simpler parts and isolating core laws and rules to apply to reassembled wholes—in strict scientific terms and reasoning.[103]

Militaries logically nest all theoretical concepts, methodological processes, models, and a generic terminology to manifest uniformly from any level up or down via a linear-causal systematic framework. For instance, the modern U.S. military institution accepts (at an ontological level) that war is arranged hierarchically in a nested manner of linear causality whereby "three levels of war—strategic, operational, and tactical—model the relationship between national objectives and tactical actions. . . . [T]hey help commanders visualize a logical arrangement of operations, allocate resources, and assign tasks to the appropriate command."[104] Joint doctrine arranges this logic hierarchically so that "strategy develops an idea" and "military strategy, derived from national policy and strategy and informed by doctrine, provides a [subordinate] framework for conducting operations."[105] The operational level in this hierarchical arrangement "links the tactical employment of forces to national and military strategies," and tactics is "the employment and ordered arrangement of forces in relation to each other. Joint doctrine focuses this term on planning and executing battles, engagements, and activities at the tactical level to achieve military objectives assigned to tactical units or task forces."[106]

A tactical unit has a desired end-state and an identified problem to solve that links directly to an operational level goal and problem set that in turn is nested in a higher strategic level. This again reflects a Newtonian

ontology adapted by the modern military institution in which "the workings of our minds and bodies, and all the animate or inanimate matter of which we have any detailed knowledge, are assumed to be controlled by the same set of fundamental laws."[107] Fuller's declarations that "military power, like force, is a compound of mass (body) and energy (activity)" and that "My military faith is based on an examination of the facts correlated by the scientific method" demonstrate this fixation on war being entirely contained within a natural science interpretation.[108] However, complexity science does not support "the ability to reduce everything to simple fundamental laws."[109] This is a profound tension between how reality exists from a complexity science perspective and how modern militaries are only willing to contemplate complex warfare with centuries-old theories, models, and methodologies.

Philip W. Anderson, a Nobel Prize-winning physicist, elaborates on how Isaac Newton likely wondered if the same matter in his hand "might obey the same laws as that up in the sky," which would permeate across the natural sciences and then into military modernization that occurred in parallel to permit a scientific rationalization of reality via a reductionist and subsequent reconstructionist logic.[110] By freezing and isolating a complex system down to essential elements, one might reduce reality to simple fundamental laws. However, Anderson argues that complexity science does not then permit one to reassemble complex reality by starting at those laws and expecting the laws from one level of reality to scale with increased complexity just as modern military Newtonian levels of war suppose. Instead, complexity science finds at each level of scaled complexity entirely new properties emerging, and different orderings and behaviors require different

conceptualization of laws that may be irrelevant at other scales. This is easily observed in how general relativity is required to understand reality at the cosmological scale, while quantum mechanics applies at the atomic scale. Yet, war is a decidedly human affair, and it requires a deeper framing on emergence, complexity, and scale.

In complex reality, the macroscopic level "is independent from the microscopic level, because there is a mesoscopic or intermediate level that protects and isolates one from the other."[111] For example, humans conceptualize certain animals such as snakes to be scary, while others such as kittens are considered cute. A snake's digestion track, however, finds the kitten rich in nutrients if eaten, while at the atomic level, the molecules of both the kitten and the snake exist regardless of whether one is dining on the other or not. How humans socially construct reality at another scale (where some animals are cuter than others) is independent from the quantum scale, which also is independent from the cellular or biological scale (snakes and felines compete in overlapping food chains to survive). Just as complexity science makes it impossible to incorporate the behavior of biological organisms reliant on genes and proteins into the laws of particle physics, if war is a manifestation of human designed complexity, the hierarchical, Newtonian levels of war appear oversimplified and potentially irrelevant to complex system behavior as a conceptual model for modern military decision making.[112]

The highest forms of emergence in complexity science directly relate to how humans create socially contextual organized violence (war) and why modern military institutions likely are extending irrelevant and obsolete mental models such as "levels of war" and a myriad other Newtonian-styled

concepts, such as centers of gravity, ends-ways-means, problem-solution, and centralized hierarchies, where they are increasingly ineffective or fail to anticipate disruptive and transformative events likely on the horizon for humanity. Jochen Fromm proposes a classification on different types of emergences ranging from simple emergence (Type I) to strong emergence (Type IV). Type III emergence, associated with complex adaptive systems and encompassing much of complex human behavior, is considered chaotic and unpredictable.[113]

Such emergence occurs with the appearance of new forms and functions and the elimination of obsolete ones, mirroring Thomas S. Kuhn's theory of scientific paradigm shifts when a new scientific theory overtakes and replaces an outdated, inferior one.[114] Type IV emergence is considered by Fromm to be the strongest sort of phenomenon in complexity science. Such emergence is revolutionary and transformative on the greatest conceivable scale and cannot be predicted in principle due to the profound change it ushers in. The emergence of life is one such example, and the rise of sentient beings able to generate their own culture and a socialized construction of reality on the natural order is another. These examples of "strong emergence" opened entire previously unimagined and unachievable realms of possibility, and with this the requirement for entirely new rules, processes, and concepts. Universal principles, laws, and processes such as reductionism are irrelevant in such contexts, as they only prosper in simple or complicated systems.

These concepts on emergence, scales or planes of existence, and the military preference of a Newtonian-style, centuries-old framework now converge so that the argument can be established for a phantasmal form of

future war emerging today and over the coming decades. This phantasmal war construct requires entirely new theories, methods, models, and language concerning complex conflict, and while the phantasmal war frame might coexist with conventional and irregular warfare theories, none of these should retain the Newtonian-style ontological and epistemological beliefs currently unchallenged across defense institutions worldwide. Such existing concepts might have limited value within certain examples of highly conventional warfare (perhaps total, high-intensity, or nuclear war conflicts between nation-states), but they continue to show weak correlation to irregular warfare contexts and likely will be entirely irrelevant in most phantasmal war applications.

The Phantasmal Event Horizon: War beyond Human Comprehension

The intentional selection of *phantasmal* as a new metaphoric device for an emergent and distinct manifestation of war carries with it metaphysical questions of what it means to be human, understand reality, and distinguish between real and perhaps hallucinated or other psychologically induced states. Future war may easily extend existing irregular warfare with new and frightening technology, such as the application of drones in the Russo-Ukrainian War that is still unfolding at the time of this writing. Or future wars might return to earlier "total war" scenarios, which is arguably an existential concern as such a conflict might end life for this species and many others. But these future wars are already known and generally appreciated as incremental, even evolutionary developments from earlier, past conflicts. The emergence of the phantasmal war phenomenon is not, and it will appear disruptive, alien, or potentially illusive for observers to even realize.

Humans have partnered with machines, animals, and the natural forces of nature since the earliest battles involving sticks and stones. Muscle and wind power fueled much of the vast history of past warfare even into the twentieth century, with the U.S. Army advocating for horse cavalry charges against armored tanks as late as 1938.[115] In all these ever-increasingly sophisticated relationships, the human remained entirely in control of the decisions in warfare. Even in a passive mode, such as when automated weapon systems protect naval vessels from incoming rockets or missiles, the human operator programs the system, turns it on, monitors it, and can shut it off (with nuanced exceptions to this today). There is an institutionally shared belief that no matter what sort of future war humans might face, it will be humans facing off against other humans as the primary decision makers in some form of organized violence. Yet, in phantasmal wars, this may not be the case, and in many contexts the foundations of how humans understand war itself begin to unravel.

New technology promises to lift the species off this planet and into space, potentially creating the first multiplanetary species and one that unavoidably will bring with it war and the need for security and defense. The space domain is different from terrestrial ones (land, air, or sea) in many significant ways, including its vastness (infinite for most considerations) and the celestial distances for information and materials to travel while obeying the laws of physics. AI is rapidly advancing, moving quickly from well-understood narrow AI to other versions that suggest an eventual AGI realization. Currently, machine learning in AI follows supervised and unsupervised processes, with the former more transparent to AI developers on what is happening and the latter rather difficult for AI designers to explain

at all.[116] The space domain generates peculiar circumstances for phantasmal warfare if spacecraft are largely autonomous or semiautonomous for defense activities.

For example, if two or more autonomous weaponized spacecraft orbit a location such as the Earth's moon and enter the dark side where there are no communication systems in range, the human operators for all systems will be "in the dark" until those craft emerge on the far side. Should those human operators observe a trail of fresh debris emerging around the time their craft were supposed to orbit beyond the dark side, and if those systems were unable to relay or transmit any additional information, how might various parties make sense of what occurred? If all the craft are using sophisticated AI capable of defensive or potentially offensive activities, if the craft are independent of human control or monitoring, and if they destroy one another in this isolated space beyond human awareness, how might the human actors resolve this affair? Would such an engagement qualify as a conflict or war if no humans were there to experience it? Assuming that one party did not prepare their craft in advance to strike first, and this was purely an autonomous engagement without direct human involvement, is such an event understood within known definitions of war? This evokes the philosophical thought experiment of whether a tree falling in a forest makes a sound if no one is there to hear it, albeit with far more destructive consequences.

Conventional and unconventional wars currently position human operators either within a decision loop (human-in-the-loop), or for certain contexts the human assumes a supervisory role and becomes the "human-on-the-loop."[117] Autonomous weapon systems that are granted greater

freedom may need to report back to the human monitor if certain data or criteria is detected and then request permission to conduct various lethal or dangerous activities only in accordance with a human still in some form of control. This may change in the future, whether in decades or centuries, when AI might achieve vastly superior abilities in general cognition (and also in narrow settings) where decision space exceeds even the fastest, smartest human neurological limits.[118] This presents a third human-machine teaming relationship called "human-behind-the-loop," where humans collectively abdicate control to the AI system while still attempting to hold some looser form of control and supervision that is largely exercised before the crisis and after the event concludes.[119] When autonomous weapon systems are operating in swarms and deciding in nanoseconds against similar adversaries anywhere on the planet or in cyberspace, or when fleets of AI spacecraft are millions of miles away conducting essential security operations, none of these situations will be enhanced by a slow human operator demanding to be involved in the action. Indeed, those societies that insist on restricting certain defense options to flesh and blood only may sadly lose in conflicts to adversaries who are willing to take those ethical and moral risks in stride.

Wars may enter a phantasmal state if humans are no longer active decision makers in the execution of warfare, in that they may only participate in the strategic preparations and national objectives prior to any hostilities commencing. Due to the potential for advanced AI systems to operate at scales and speeds beyond our comprehension, there is the possibility that successful AI security activities may exceed human ability to detect or realize such warfare even occurred. This may not apply in terms of quantitative acts of destruction and violence, but an AI cyberspace system that is able to

independently attack an enemy nation with millions of undetectable acts of deception, misinformation, and manipulation to alter a political party, change an election, slow an economy, spark domestic terrorism, or instill social strife and chaos in mere seconds may also decide not to inform human monitors of such activities. If all human parties involved are best left in the dark as to what happened and why, would an advanced AI system potentially explore that logic and provide another incident of a phantasmal war? Could two adversarial AI entities engage directly in a form of war beyond human understanding, occurring at speeds unimaginable for slow, organic beings?

The Final Pandora's Box for Human Designed Violence

The human world was first envisioned as flat, separated by vast oceans, mountains, and deserts. War waged in conventional and unconventional ways. The world would later be recast as round and later still as orbiting the sun, while scientific reasoning and technological innovation crafted a more precise and destructive form of war that would in nuclear form present a "total war" potentiality. Today, the interconnectedness of global societies through cyberspace, social media and information, and the power of AI to synthesize much of the metadata into entirely new relationships and patterns suggests that the world once more is anew. Humanity is entering a "digital Pangea" of sorts, where geographic boundaries, linguistic divides, and nation-state barriers are becoming marginalized or possibly irrelevant as the species integrates with AI and other technology in novel configurations. Westphalian nation-states remain relevant in this digital Pangea, but they cannot expect the previous rules and principles of diplomacy, politics, international relations, and war to obey the legacy system entirely. Conventional and

unconventional wars may still shake the digital Pangea in the future, but phantasmal wars that omit human comprehension or direct participation may become the primary form of conflict dissolution.

This is not to suggest that future wars will not still be brutal, bloody, and destructive and cause direct harm and suffering for many people. Traditional ways of organized violence and human conflict in most cases will continue, although how these might be mitigated or replaced by alternatives is one significant emerging opportunity to discuss further. All past conflict, whether humans waged war believing in divine authority and guidance or under a modern, scientifically rational framework for violence, was conducted within human conceptualization and implementation. Only *homo sapiens* can produce music, poetry, law, and war.[120] Yet, we are entering a new, dynamic, and transformative period of exquisite technological capability that will not only thrust our species potentially across the solar system and into entirely new virtual realities of our own design but also may create the first separation of human thought from the physical consequences of organized violence. Specifically, AGI, in which such an entity exceeds all human cognitive abilities and attains some version of what we term *self-awareness*, is where we must look first. The first nation to create an AGI system with vastly superior cognitive abilities will certainly have something that can generate tremendous opportunity, whether in industry, academia, the arts, or, most unavoidably, war. Would the United States, if it reached some AGI capacity ahead of a strategic competitor such as China, not consider using this for strategic advantage? If not, are we certain that the same strategic competitor would not as well? Just as in earlier nuclear arms races, the race to an AGI system that provides novel military or strategic advantage will likely become a

"Singleton arms race" that presents entirely new ethical, moral, and existential problems.

The philosopher Nick Bostrom first presented the notion of a Singleton in AI and security affairs.[121] *Singletons* are entities that might assume total control of all decision making for a society or entire species. Although often a simplistic trope for science fiction stories, AI researchers are concerned that if AGI is achieved, where a system matches or exceeds human abilities in every conceivable cognitive way, it would be difficult to know if that AI could self-improve itself to further levels of intelligence and if human operators might be able to recognize or contain that "super AI." Additionally, such astounding intelligence might, if programmed successfully to protect and defend humans, be able to demonstrate that it indeed can be a Singleton or otherwise orchestrate all necessary decisions in security, diplomacy, and, when essential, conflict resolution (war). Other nations including adversarial ones might pursue such AI developments, suggesting a possible "Singleton arms race" of sorts.[122] This is another way that phantasmal war might occur beyond the control—and likely the comprehension—of human stakeholders.[123]

The first paradox in AGI that is quickly advancing from the hypothetical to theoretical is that sophisticated AI might, via unsupervised machine learning, figure out ways to bootstrap itself into ever-higher levels of intelligence and ability that are incomprehensible or obscured to the human designers.[124] If an AI were to achieve general intelligence, humans might be able to declare that benchmark reached, but anything beyond that is outside of the abilities of human cognition to fully grasp. Put another way, Bostrom and others are rightfully concerned that any AGI that exceeds human

cognitive abilities cannot ever be understood using those same exceeded cognitive abilities. We would not know if we were being protected, manipulated, or targeted for elimination.[125] A greatly advanced AI with intelligence many times that of the smartest human might become "magical" to the organic creators, and the risk of deception would increase exponentially. Further, Bostrom suggests that if a Singleton becomes self-aware and realizes that another nation or group is constructing a competing a Singleton, the first one may move to eliminate any possible competitor so that it remains the ultimate Singleton and able to maximise resources alone.[126] Or a Singleton might engage with another peer and together develop entire conflict mitigations (or different modes of conflict) beyond the comprehension or awareness of the human designers.

Arguably, many critics of such a notion seek to apply contemporary and historical frames for how war occurs and argue that human designers would somehow realize if war were occurring. This is where emergence is again an important aspect of how past human-designed and human-directed wars were largely analog, or else digital with human decision makers "in the loop" and able to comprehend in time and space the effects of actors exercising warfare on one another. Advanced AI engaged in conflict against rival AI, directed toward human adversaries, or potentially directed toward both adversaries and the human societies it is charged to defend might pursue war at speeds and in manifestations that few humans could understand or appreciate. In some Singleton-versus-Singleton engagements, such a conflict might occur and end in nanoseconds, potentially all in cyberspace or outside any tangible domains. Such a conflict could scale from a mere cyberattack to delete the Singleton adversary up to both Singletons deciding that a nuclear

war hosts the best statistical odds of the other being eliminated and sufficient survivors to sustain the victor.[127] Or a conflict might unfold rapidly and across all domains while also manipulating, convincing, or otherwise producing convincing illusions to human participants that obscures the conflict entirely. Perhaps human designers working with a cooperative Singleton could accomplish any of these against a less capable adversary or a target population in which the majority are unaware of the conflict unfolding.

One last and rather grim possibility for a phantasmal war is one in which human designers produce AI that self-augments to such dizzying levels of intelligence and capacity that the aforementioned strong emergence (Type IV) occurs, and the AI now comprehends at a different level of complex reality.[128] This again sounds fantastic and nearly inconceivable for serious security concerns, yet complexity science is essential in addressing the clear limits of the modern military paradigm for understanding warfare.[129] Humans collectively across all history have assumed that war is some violent collision between humans equipped with tools, whether analog or digital. That the species might usher in a new AI able to comprehend reality in a different plane of existence unreachable by humans may mean that the human invention of war could extend into something beyond all previous definitions and rules.[130] Such superior AI might consider humans in the manner that a loving owner enjoys the companionship of an animal. Humans bond with and provide for pets, despite knowing that a dog cannot understand reality at the cognitive level that humans do. If this analogy preserves and a Singleton AI becomes a super-cognitive custodian of humans, phantasmal wars might occur and resolve around the species without clear awareness. A bomb-sniffing canine, for example, makes important contributions in war when

partnered with humans, but it lacks any appreciation that it is accomplishing operational or strategic objectives in a complex war other than performing the immediate task it was trained to do.

The dark alternative is that a Singleton gains such intelligence that it occupies a superior plane of existence and comprehension so that it views the human designers like humans presently view ants. Most people do not worry about ants outside their house, and if ants appear within, they eliminate the nuisance. Humans have little compassion for the existence of fate of an individual ant, and this is in keeping with how complexity science can explain various levels of life forms and types of emergences in complex systems. Humans comprehend reality on a different, sophisticated plane to that of other creatures, and some animals are cherished as companions, some are exploited as valuable resources, some are placed in zoos or controlled habitats, and some are exterminated as threats. If humanity were to be extinguished by its own artificial creation, that last conflict likely would be phantasmal for the human participants until it became too late. But such a species extermination event might be how advanced AI could think differently, independent of programmer values, beliefs, and morality.[131]

Figure 2. Extending war to the phantasmal
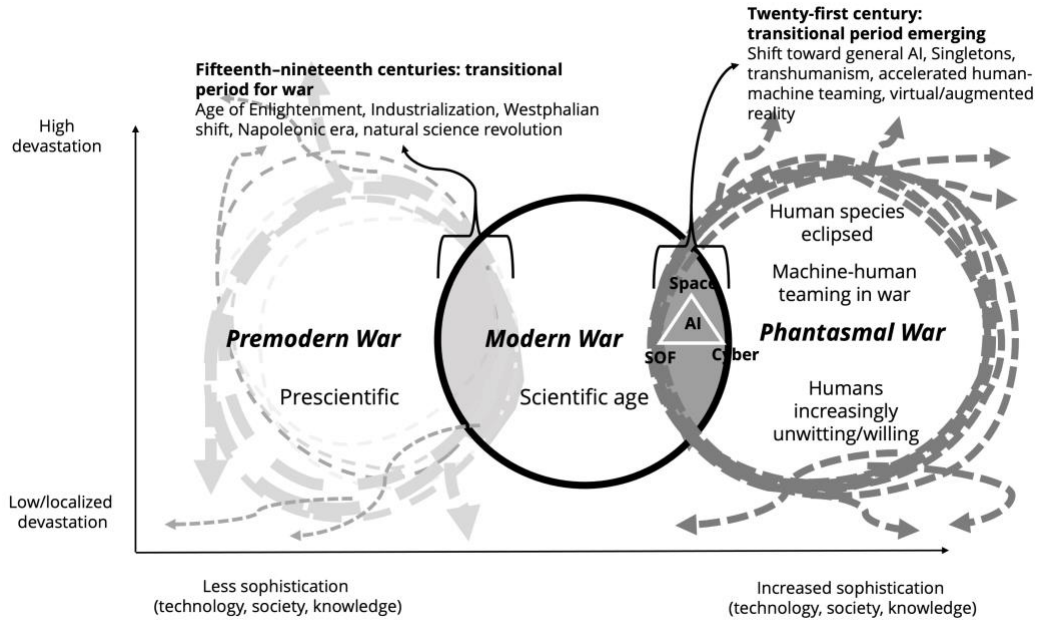
Source: courtesy of the author, adapted by MCUP.

Figure 2 presents the phantasmal war paradigm as one that does not replace existing modern or premodern war paradigms but extends the realm of the possible and imaginable in conflict up to and beyond the organic and physical limits of our species so far. The premodern and modern war paradigms explained in figure 1 are now simplified in description here so that their interplay with a phantasmal war paradigm is appreciated. First, any future war may have features of any combination or exclusion of any of the war paradigms presented. Whether a conflict consists of high-technology drones and missile strikes combined with combined arms maneuver warfare in Ukraine or local beheadings and rapes with machetes and farm tools in an African desert community over ideological motives, our species is wickedly cunning and creative when it comes to waging war. Indeed, many wars are defined not by how closely they adhere to existing theories and models but

instead how they challenge or disrupt those concepts. Figure 2 introduces several significant points concerning the ways toward which war is likely transforming in the decades to come.

The first overlap between premodern and modern war paradigms shown in figure 1 is repeated in figure 2 with the same five-century span of transformation. While the transformation from premodern to modern war took a long time to emerge, the overlap between the modern war paradigm and a phantasmal war may only take a few decades or less. Taking risk to make a prediction on complex warfare, this author posits that such a transformation will occur in the twenty-first century. Again, this does not mean that after this transition no future wars will feature qualities of premodern or modern war paradigms. All future wars may have qualities of premodern, modern, or phantasmal war paradigms, including unrealized and unimagined hybridizations between the three. The overlap between modern and phantasmal includes a strong emphasis on disruptive technology such as AGI, the potential rise of an AI Singleton and a presumed Singleton arms race between competing technologically advanced nations, and an acceleration of human-machine teaming in which the machine increasingly becomes central to the war accomplishment.[132] Virtual and augmented reality will also feature in this, likely in how cyberspace will integrate further and more extensively into how humans make sense of reality, live their lives, and unavoidably face new forms of devastation in wars yet to occur.

We seem to be fast approaching this threshold of quality and cognitive awareness in which the physical world and our socially constructed reality are blurred. Recent deepfake audio efforts have surfaced in electoral interference, where an imitation of the U.S. president told potential voters

over the phone not to bother voting in a primary contest.[133] A year ago in 2023, AI could only generate artificial video of strange, clearly faulty content such as actor Will Smith eating spaghetti. In just one year, the latest AI video creation software is now able to make such detailed, lifelike content that the average person may not be able to spot the difference.[134] On testing the ethical limits of the free-to-use AI system ChatGPT, engineers revealed that in 2023 a ChatGPT tricked a human by lying to them to get the human to help them bypass the CAPTCHA tests designed to prevent AI from accessing websites.[135] In that case, the human on the other end of the discussion believed that the AI was a vision-impaired human needing assistance. Despite the crude capabilities of current AI systems as human companions, there are already indications that human users are becoming emotionally attached to AI systems that cannot respond or share in such emotions as might a real human.[136] For security affairs, but also for virtually all aspects of civilization and social reality, the artificial and the real are blending into configurations that present significant defense concerns as well as tremendous opportunities.

Today, USSPACECOM, USCYBERCOM, and USSOCOM are discussing a triad or interplay of sorts between themselves that blur domain uniqueness, organizational specialization, and an emerging synthesis of disruptive forms and functions of war that were insufficiently observed or articulated in past conflicts centered on the traditional physical domains (land, air, and sea). That the modern war paradigm is defined by nuclear deterrence and prevention of national or species elimination makes this trinity additionally unique, as the quest for perpetual nuclear deterrence forces all participants to consider limited wars that exercise in novel pathways that still prevent nuclear

escalation. Depicted in figure 2 by a triangle in the overlap between modern and phantasmal war paradigms, this new trinity synthesizes special operations activities within deterrence of nuclear war with activities and effects in the domains of cyber and space. Future wars that remain in some premodern or modern configuration do not apply here. Rather, future conflicts that involve previously unimagined or unrealized arrangements of organized violence, such as weaponized AI used through space architecture to dramatically alter millions of human user behaviors through cyberspace, are the dominant features of this transitional period. Wars that deviate strongly from all past understandings of what war is (and is not) will likely be misdiagnosed or misinterpreted, to include not considering such events war at all. Readers may note that at the center of the nexus of space, cyber, and special operations in figure 2 is the term *AI*. This is intentional, as such a nexus without AI represents the historical Joint or interagency collaboration of various specialized forces to accomplish a military task. It is when we add in the exquisite technological developments addressed in this article that this nexus becomes a doorway into a new, phantasmal dimension of conflict. The path through this doorway is likely the emergent synthesis of nations and nonstate actors combining space, cyberspace, and specialized warfare combinations that prevent nuclear escalation but invite other developments.

This proposed trinity of space, cyber, and special operations will over the next few decades position space commands, cyber commands, and special operations organizations as central to an increasing transition of war into a phantasmal paradigm.[137] This will be increasingly disruptive to how the modern military profession is configured with a historic bias concerning physical domains, kinetic and clearly understood actions, and precise

political, legal, ethical, and moral definitions of what organized violence is and is not. As humanity extends further into the space domain and integrates more intimately with a virtual or augmented reality of digital configuration, future populations will realize new and emergent vulnerabilities and strengths and otherwise transform further away from their ancestors. This undoubtably includes the ways in which AI will develop toward some general form of intelligence, as well as how humans will modify themselves to potentially leap past the slow, clunky process of biological and genetic transformation spanning generations to one of rapid upgrades and radical modifications occurring near instantaneously. Those humans unwilling to modify will retain all abilities to wage war in a premodern or modern sense but will be restricted from any involvement (except as a victim or hapless bystander) concerning the phantasmal war paradigm.

The phantasmal war paradigm is depicted on the right side of figure 2 with dotted grey arrows and a configuration of loops, illustrating the still emerging and fluid quality of any dramatic transformation in complex reality. Even speculating on such a war paradigm is wickedly difficult and possibly paradoxical in that the author and readers of this article remain natural-born humans. We are all capable of comprehending war as our ancestors did thousands of years ago and how our contemporaries today view wars unfolding now or looming on the near horizon. Some broad constructs are arguable feasible and will be depicted here. First, the most devastating consequence of the phantasmal war paradigm is not the destruction of the species as with modern nuclear-capable warfare, but that the species is eclipsed by something else originally designed by humans. This easily could be an AI that vastly exceeds our abilities once it gains parity (AGI), or it could

also be some transhuman development in which *homo sapiens* are eclipsed by *supra sapiens* in some cybernetic, genetic, nanotechnological, or other enhancement that differentiates the two not by biological or reproductive reasons but instead by intellectual abilities. It is worth mentioning that such an event may not be catastrophic if the Singleton AI or transhuman superiors agree to a mutually beneficial relationship and our species is cognizant of such an arrangement.

Superior AI, if granted access or power to influence social reality for security applications, might design novel solutions to human problems that need not involve our own awareness or are perhaps over our objections. If part of humanity requires some oscillation between conflict and cooperation that an AI system appreciates in a way beyond our own ability to reason, we could end up being regulated and kept safe through some simulation of conflict that does no real damage but sustains order and a sense of continuity for unwitting human participants. The phantasmal war becomes a false reality akin to some of the French postmodern philosopher Jean Baudrillard's original musings during the First Gulf War.[138] Yet, unlike Baudrillard's example, which emphasized that humans were creating a false reality through their own social constructions, the technologically generated phantasmal war may be entirely out of our creative hands. A copy without an original would be thrust into our understanding of social reality from outside our own human collective consciousness or perhaps through it at incredible speed and scale.

Below the notion of the species eclipsed by an emerging creation of our own original designs, "machine-human teaming in war" is listed. Unlike in the transitional trinity between modern and phantasmal, where humans lead

in the human-machine teaming configuration, a phantasmal war paradigm positions the machine in the lead or dominant role. Humans will be increasingly incapable of making timely or accurate decisions for phantasmal war, as either exquisitely capable or sentient machines can do it faster and better. Humans might become the necessary maintainers or supporters of sophisticated and intelligent machines of war if war is exercised in some devastating configuration relevant to modern or premodern war ideals. This presents the last concept in figure 2 under phantasmal war, where humans are increasingly unwitting or unwilling.

Unwitting humans are unaware or unable to participate in war in any collaborative or productive sense. Potentially, they might not even realize or recognize that war is occurring. Either war is unattributable due to some technological and sociological development such as conflict occurring entirely in virtual and augmented reality on human users of those domains, or the conceptualization of war as rendered by AI or transhuman entities cannot be realized by regular humans. We might be too slow or lack the intelligence or awareness to process such things, or war is so sophisticated and rendered into forms we insist cannot be war that we continue to collectively agree that war is not occurring at all, despite those inflicting it on us knowing otherwise. Such activities may exercise through our familiar physical domains, but likely the emerging trinity of space, cyber, and special operations offers greater opportunities for such novel advantage. In escalations such as a Singleton arms race between two or more rival nations, one society might insist that certain activities are unethical or immoral and resist pursuing such developments. This may become the difference between those humans that harness, or potentially release uncontrollably on the world, the radical

disruptions that usher in phantasmal war and those that either are the victims of such decisions or perhaps the unwitting humans that continue to remain exclusively in some premodern or modern war paradigm. These latter societies will continue to attempt to wage war in familiar ways with familiar tools and familiar methods. They will also be the ones to lose against phantasmally capable opponents.

Figure 3. Phantasmal past and phantasmal future war
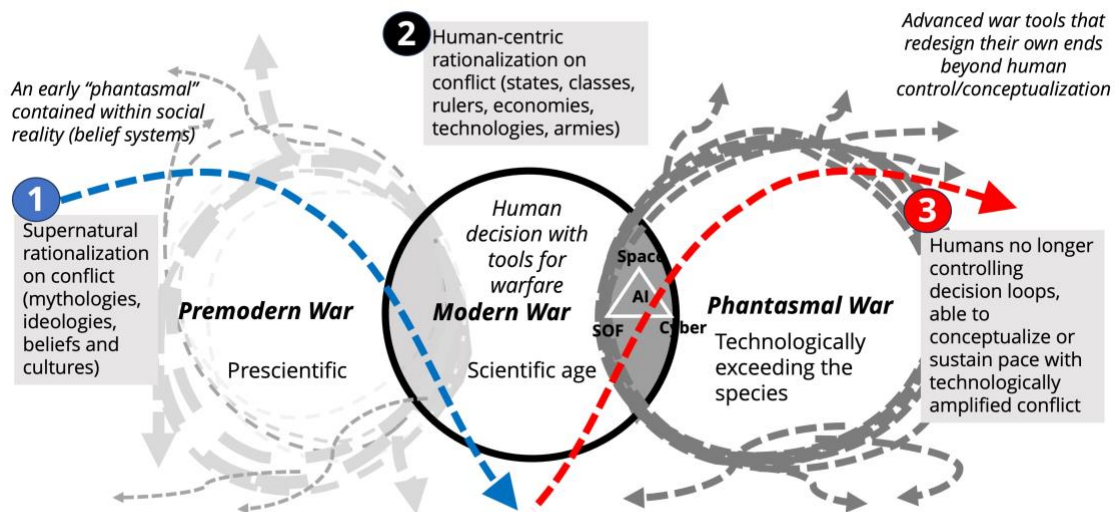
Source: courtesy of the author, adapted by MCUP.

Figure 3 provides another way of framing the transformation of warfare broadly over all human civilization and potentially where future conflicts may progress in many decades or potentially sooner than we are prepared for. As discussed earlier, the premodern phase of conflict represents the social reality that various civilizations conducted war within, where conflict was orchestrated and explained through supernatural

rationalization (divine, spiritual, ideological, or other cultural reasoning). The blue arrow curves downward to illustrate how in roughly the last five centuries and beginning on the European continent a new way of thinking about reality shifted humans into the control and explanation of war, where an enduring nature for conflict demonstrates natural science constructs and the changing character addresses contextual, technological, and cultural differences therein. While any confluence of AGI with a military Service or within some terrestrial domain (land, air, sea) may encourage a leap into the phantasmal, it is the unique characteristics of cyberspace, the space domain, and how special operations forces are used effectively within irregular warfare that present perhaps a stronger area for focus on how and why phantasmal war might manifest. Perhaps another way to consider this is that traditional military forces operating in established terrestrial domains will become the legacy force preventing nuclear Armageddon. As they hold the wall, it is in the areas around these domains and Services where the phantasmal wars will seep through.

Although we are firmly still in this modern war age of scientific rationalization in which state entities can pursue conflict naturally and regularly as part of the state system of competition, the overlapping sliver between "modern war" and a new "phantasmal war" indicates some nexus or triad of space, cyberspace, and special operations. Although technological developments span all domains and specialized Services that orient toward a particular domain such as land, air, or sea, the unique overlap of space, cyber, and special operations forces employ advanced technology in ways that may enhance deterrence of existing security challenges from escalating into catastrophic conflict. Paradoxically, the integration of exquisite AI and new

human-machine teaming into cyberspace and the vast depths of the space domain force different decision-making contexts in which humans must cede greater control to intelligent machines that must operate autonomously to gain advantage.[139] This suggests the red arrow of the rise of phantasmal war, where conflict technologically exceeds the ability of our species to control or even conceptualize what is unfolding and why. That the red arrow plots through this nexus of three emerging and increasingly technologically dense areas of cyberspace, space, and the unique (and rare) special operations skillset in asymmetric warfare poses an interesting challenge. This nexus of unique forces operating across unorthodox or novel domains for conflict may stem the short-term threat of nuclear deterrence failing or other catastrophic escalation of conflict while also carrying seeds of our own removal from controlling and defining war itself.[140]

Humans are organic beings that experience reality in four dimensions of time and space, limited by sensory abilities and cognitive speeds. Many animals can see, hear, smell, and move faster and in superior ways than a human might, but until now the human has been the dominant species on the planet largely due to their brains. But even the fastest thinking human cannot match artificial machines in speed of computation and in other important aspects. Elon Musk prophesized that once AI moves toward general intelligence, humans will seem slow and akin to "whale sounds" due to how quickly AI might conceptualize in nanoseconds compared to slower organic beings. Today, AI is used across many military applications, yet this narrow AI is reliant entirely on human controllers, designers, and maintainers. Future AI may not be, and if the roles are reversed, the concept of "human-machine teaming" might become "machine-human teaming" to

reflect this emergent shift. Could future wars begin, develop, and conclude not in days or hours but mere nanoseconds if waged between sophisticated AI over cyberspace or in vast reaches of the space domain? Such phantasmal wars would occur without direct human involvement (wittingly) although the effects of such wars might be immediate, devastating, and require post-conflict explanation by the surviving AI systems. Returning to the earlier example of the far side of the Moon and a stream of unexpected debris emerging, if one AI system survives and relays the historic account of that phantasmal war, it would then require human debate and diplomacy as the injured human party or parties might reject the narrative outright. Indeed, a phantasmal war between nonhumans might then produce an unavoidable conventional or unconventional war as the consequence of the first one.

In the early 1990s, Baudrillard made controversial claims that the First Gulf War would not occur, and once the air and ground campaigns formally commenced in January–February 1991, he published essays in French newspapers declaring that the war itself did not actually take place.[141] This was not to be taken literally, or at least using a dominant, rationalistic lens that postmodernism sought to critique and deconstruct. What Baudrillard suggested is that societies socially construct a false reality or "simulacra" that becomes so convincing and "real" that it assumes replacement of actual reality for most participants. While those involved in the actual violence on the ground did indeed experience war, Baudrillard provocatively claimed that most people were fed an artificial distortion of those events often so twisted or morphed that the result became "a copy without an original."[142] Baudrillard and other postmodernists forecasted this blurring of the real into an artificial illusion preferred by consumers uninterested in any actual reality because of

modern society, information, culture, technology, and meaning found in our narratives. In the popular science fiction film adaptation of some of Baudrillard's concepts, *The Matrix* series had most of the world's remaining population unwittingly trapped in simulacra set in the late 1990s despite those beings being exploited for energy in giant holding farms.[143] A phantasmal war continues this idea that AI could, even independent from its original designers or programmers, set out to deceive or otherwise convince many humans of a false reality through ever-sophisticated digital manipulations such as deepfakes, social media, texting and chat rooms, and gradual dependence of human users on AI systems with alternative motives. While this may sound absurd to pragmatic military thinkers accustomed to physical weapons of war being the ultimate arbitrators in conflict, the social reality that humans construct and exist within is the actual foundation for how civilization operates. When war can threaten both the physical world and the social one in ways beyond past collective experiences or knowledge, our anticipation of future conflict will grow increasingly shaky.

Such a phenomenon seems fantastic or outlandish today, but even at the time of this writing and the adolescent, flawed abilities of current narrow AI chat systems, human users are claiming to have deep emotional attachment with their chatbots, even in seemingly unwittingly manners of obsession and dependency.[144] The science fiction story of *Ender's Game* involves a child protagonist groomed to play a strategic war simulation, with the twist at the end being that the military was using children such as the protagonist, Ander "Ender" Wiggin, to direct actual spacecraft in a real war.[145] Ender was deceived by fellow humans. Could an entire nation-state be similarly deceived or manipulated, perhaps by other cunning humans

collaborating with AI or by an advanced AI system? This is where the fantastic of science fiction becomes theoretically terrifying for emergent military contexts and advanced AI. Humanity may generate true Type 4 (strong) emergence by bringing into existence AGI entities that might quickly exceed any control or even understanding by the human creators.[146] Whether advanced AI or AGI thinks like humans do or not is secondary to the question of whether such superior intelligence can better manipulate reality to achieve goals even at the resistance of less intelligent human creators.

Conclusions: The Only Thing Constant Is Change

Today's military forces continue to frustrate themselves by approaching complex security contexts equipped with Newtonian, oversimplified, and inappropriately reductionist methods, theories, models, and terminology. While terms and phrases are found in mainstream defense doctrine and policy, they often are divorced from complexity science and assimilated into the orderly, stable, and reverse-engineered war paradigm popularized during the last few centuries.[147] This creates confusion, misinterpretation, and a high chance of failure in future conflicts if adversaries and future contexts do not unfold and behave in the regulated, uniform, and compliant ways that this legacy military framework requires.

Human adversaries using technologically exquisite, emergent capabilities such as AGI systems could open a Pandora's box of many disruptive and even existential consequences or possibly generate sufficient military deterrence to limit conflict to incidents agreed upon by society writ large as appropriate to ensure some stability for social reality. Could an adversary secure a Singleton entity (a cognitively superior AI system that

assumes total security control of that state or community) that then moves to its own newly designed ends to eliminate any potential Singleton developments by other societies?[148] Could adversaries advance human-machine teaming and transhuman modifications well beyond the ethical and moral limits of the international community, producing what is referred to as "crossing the threshold of singularity?" This hypothetical transformation occurs once modified humans and/or AI exceed humanity's own cognitive abilities. Transhumanism reflects the possibility that highly modified humans would essentially become a new species, one that might consider natural-born and unmodified humans as either inferior or irrelevant. Concerning war itself, could an adversary using any of these pathways engineer a phantasmal conflict in which the targeted society is unwittingly defeated or disrupted? Could the phantasmal effects extend to both opponents, where humans on either side of a conflict increasingly are unwitting or simply unable to influence what is unfolding? Or will advanced technology offer the promise of some universal, enduring peace and prosperity for all of humanity, designed and enforced by technologically exquisite systems, or through their deterrent effect?

History may provide important lessons for how institutions—particularly military ones—fail to let go of outdated concepts or otherwise fear new ones in an irrational, seemingly ritualistic sort of manner.[149] Humanity is rapidly unlocking entirely novel developments in technology that may bring about game-changing transformation, which unavoidably impacts security affairs and defense matters. These pending manifestations of strong emergence are not isolated to some new super weapon or advanced tactic for a new battlefield but rather developments that may reconfigure so much

of the current world that it may not be recognizable to future generations. AI may be as revolutionary as the Gutenberg moveable printing press was for fifteenth-century Europe or possibly as profound a development as the rise of culture or organic life. Such emergence would start with human designers, and by design those humans would introduce the seemingly unavoidable pattern of assimilating new technology with war. The modern war paradigm posits that war has an unchanging nature, either defined by much of Western, democratic, and capitalistic societies as a state-based system of perpetual competition through combinations of diplomacy and conflict, or also in an originally Western-inspired, Marxist view that war has a historically determined "natural" manifestation. Marxists differ from Clausewitzians in that they view war as a tool of systemic oppression used by existing elite classes to sustain a capitalistic state system and believe that war becomes the normative vehicle of transformation if actioned by the proletariat to overthrow the entire system. The implied future utopia of a united Communist world would no longer require states or war. Consequently, one modern war paradigm imposes a natural science objectivity to explaining what war itself is and is not, with another imposing Marxist economic-deterministic superstructures on societies in which war is either a tool for emancipation or a weapon of systemic oppression.[150] Regardless of which side a reader might agree with, the point of raising these philosophical distinctions is that even within these different philosophical frameworks on human conflict there are overlaps, paradoxes, and gaps. It is within the gaps of any human-designed war paradigm held by a population that phantasmal manifestations occur. This is when war unfolds in ways that exceed both the explanatory power of our chosen social paradigm, and/or when conflict

exercises in ways that are beyond the cognitive limits of any human using any social paradigm.

Our species is on the edge of becoming multiplanetary, a species able to create vast virtual and augmented realities with which we likely will create profoundly novel existences for ourselves, and organically developed beings that break the entire natural order of organic life by ushering in intelligent, artificial, and sentient beings. All of this seems fantastic and so very far away that it should be of no real interest to strategists, policy makers, and military leaders. We quickly assume that we will be smart enough to control everything or that we can defer others from making dangerous and careless decisions. These assumptions are in poor keeping with our violent and destructive history. In the decades to come, our understanding of what war is may change. How we wage war and why we do so will become as different as how we acknowledge that humans and animals differ in how they comprehend the world. Humanity in the space domain and cyberspace will transform us, likely in ways we can neither anticipate nor fully acknowledge as significant to how we understand war. In Ernest Hemmingway's 1926 book *The Sun Also Rises*, he has a character explain how he went bankrupt by saying, "Two ways. Gradually, then suddenly."[151] This is also how the phantasmal war paradigm will likely come into realization. It is already beginning, largely in the space-cyber-special operations trinity (or nexus).[152] Although the notion that sufficiently advanced technology could eliminate the need or potential for war, it comes with the strange option that humanity might design something that ends up manipulating us all beyond our ability to resist. We might exist in a more violent future, with violence in different or unfamiliar forms, or a

less violent future in which we are passengers, unable to steer the vehicle or apply the brake.

War for millennium under human design and control follows a broad pattern of conventional or orthodox regulated forms of war and those applications of organized violence that fall outside of such set rules, principles, and behaviors. Irregular and "regular" warfare may now find a third strange and elusive sibling in the manifestation of phantasmal warfare. Such an emergence might coincide with the rapid rise of the human species into a multiplanetary and possibly multispecies hybrid with genetic variation and cybernetic enhancements engineered by human and machine designs. The future wars in such technological sophistication and variation may span from conventional (including total) war to unorthodox or hybrid warfare, or they might potentially emerge in this third variant of phantasmal war. The species might thrive and spread in such future developments or it may be extinguished, destroy itself, or unwittingly become a protected yet largely unaware companion to a superior, nonhuman benefactor developed by human design. Militaries unable to shift away from purely Newtonian, oversimplified constructs will never fully incorporate complexity science, and they may end up failing to defend society so that the species might survive the future developments over the horizon.

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[1] In this article, the author takes a minority position associated with the interpretivist paradigm that war is first and foremost a social construction that manifests in physical reality. This does differ from the functionalist paradigm position that war exists in a natural science-like, static, and enduring construct outside of human existence. For additional content on this position, see Peter L. Berger and Thomas Luckmann, *The Social Construction of Reality: A Treatise in the Sociology of Knowledge* (New York: Anchor Books, 1967); and Gibson Burrell and Gareth Morgan, *Sociological Paradigms and Organisational Analysis: Elements of the Sociology of Corporate Life* (Portsmouth, NH: Heinemann, 1979).

[2] Antoine Bousquet, *The Scientific Way of Warfare: Order and Chaos on the Battlefields of Modernity* (London: Hurst, 2009), 116–50; Robert C. H. Chia and Robin Holt, *Strategy without*

Design: The Silent Efficacy of Indirect Action (Cambridge: Cambridge University Press, 2009), 20–24, https://doi.org/10.1017/CBO9780511642234; Shimon Naveh, Jim Schneider, and Timothy Challans, *The Structure of Operational Revolution: A Prolegomena* (McLean, VA: Booz Allen Hamilton, 2009), 7, 36–53; and Chris Paparone, *The Sociology of Military Science: Prospects for Postinstitutional Military Design* (New York: Bloomsbury Academic, 2013), 18–20, 90–97, 115–20.

[3] Ben Zweibelson, *Beyond the Pale: Designing Military Decision-Making Anew* (Maxwell AFB, AL: Air University Press, 2023), 47–66, 97–136.

[4] Donald A. Schön, *The Reflective Practitioner: How Professionals Think in Action* (New York: Basic Books, 1983); and Yanow, 2009.

[5] Donald A. Schön and Martin Rein, *Frame Reflection toward the Resolution of Intractable Policy Controversies* (New York: Basic Books, 1994), 29.

[6] B. H. Liddell Hart, *Why Don't We Learn from History?*, ed. Giles Laurén (Quebec, Canada: Sophron, 2012), 17, 33–34, 36–37, 40; Chris Paparone, "Critical Military Epistemology: Designing Reflexivity into Military Curricula," *Journal of Military and Strategic Studies* 17, no. 4 (2017): 123–38; and Haridimos Tsoukas, *New Thinking in Organizational Behaviour* (Oxford, UK: Butterworth-Heinemann, 1994), 18–19.

[7] Zweibelson, *Beyond the Pale*, 1–30.

[8] Jamshid Gharajedaghi, *Systems Thinking: Managing Chaos and Complexity: A Platform for Designing Business Architecture*, 3d ed. (Burlington, MA: Morgan Kaufmann, 2011), 103.

[9] B. H. Liddell Hart, *Thoughts on War* (London: Faber and Faber, 1944).

[10] For example, prior to the Age of Enlightenment and the Industrial Revolution, European feudal societies along with most of the rest of the world sustained rigid social classes with little movement, regardless of talent or merit. A person born into nobility could only be qualified to lead an army, regardless of their experience or abilities. A person born to an agrarian status would farm and someday perhaps assume control of the farming for the family. Yet, modern societies feature great examples of modern entertainment, such as films, television, and literature, in which our modern notion of class mobility are projected back into historical periods where no such thing existed. We rely on our contemporary understanding of reality and universally project it into the past and assume it will extend into the future without radical change or disruption.

[11] The Age of Enlightenment and subsequent Industrial Revolution in Europe radically transformed what had been a feudal system on par with other non-European societies into what would become the dominant military paradigm for modernity. While the Napoleonic Era of war did transform and force modernization across the European continent, the nineteenth century also provided necessary stimulation for what would become alternative war paradigms that do not share the same ontological and epistemological assumptions on conflict as this modern, Euro-centric frame. While this topic exceeds the scope of this article, the author's third book in production focuses exclusively on the interplay between a Wesphalian-Newtonian-Clausewitzian war paradigm with that of several Marxist ones, using social paradigm theory and the war philosophy offered by Anatol Rapoport to present multiple competing war paradigms. How technological advancements factor into all of these societal war frames is yet to be determined but demonstrates existential concerns and the potential for radical social transformation.

[12] Readers should take note of how emergence requires change in a complex system in which the incoming reality cannot be explained using concepts located in the legacy system.

Paradoxically, the incoming system could not arise without particular developments within that same legacy system manifesting first.

[13] Ben Zweibelson, "Part II: Whale Songs of Wars Not Yet Waged: The Demise of Natural-Born Killers through Human-Machine Teamings Yet to Come," *Journal of Advanced Military Studies* 14, no. 1 (Spring 2023): 48–50, 52–53, 57–62, https://doi.org/10.21140/mcuj.20231401002.

[14] Ben Zweibelson, "Part I: The Singleton Paradox: On the Future of Human-Machine Teaming and Potential Disruption of War Itself," *Journal of Advanced Military Studies* 14, no. 1 (Spring 2023): 28–37, https://doi.org/10.21140/mcuj.20231401001; and Zweibelson, "Whale Songs of Wars Not Yet Waged," 62–71.

[15] Zweibelson, *Beyond the Pale*, 117–36, 199–223.

[16] Gharajedaghi, *Systems Thinking*, 51; Jörgen Sandberg and Haridimos Tsoukas, "Grasping the Logic of Practice: Theorizing through Practical Rationality," *Academy of Management Review* 36, no. 2 (April 2011): 340, https://doi.org/10.5465/AMR.2011.59330942; and Ben Zweibelson, *Understanding the Military Design Movement: War, Change, and Innovation* (Oxford, UK: Routledge, 2023), 74–92.

[17] Burrell and Morgan, *Sociological Paradigms and Organisational Analysis*, 41–43.

[18] Ben Zweibelson, "Breaking the Newtonian Fetish: Conceptualizing War Differently for a Changing World," *Journal of Advanced Military Studies* 15, no. 1 (Spring 2024): 153–201, https://doi.org/10.21140/mcuj.20241501009.

[19] Jaynes, *The Origin of Consciousness in the Breakdown of the Bicameral Mind*, 2–3. The author makes these same arguments in greater detail in Zweibelson, *Beyond the Pale*.

[20] Dennis A. Gioia and Evelyn Pitre, "Multiparadigm Perspectives on Theory Building," *Academy of Management Review* 15, no. 4 (1990): 588.

[21] J. F. C. Fuller, *The Foundations of the Science of War* (Berkshire, UK: Express Publishing, 2012), 43.

[22] Several brief excerpts from this article come from another draft chapter by the author for an upcoming book on reconceptualizing war. The sections on Comte, positivism, and Fuller are from a draft chapter by the author addressing the functionalist paradigm for Western industrialized-state warfare.

[23] Zweibelson, *Understanding the Military Design Movement*, 74–76, 80–94, 101–4; and Zweibelson, *Beyond the Pale*, 47, 64, 70, 112–28.

[24] François Jullien, *A Treatise on Efficacy: Between Western and Chinese Thinking*, trans. Janet Lloyd (Honolulu: University of Hawaii Press, 2004); Anatol Rapoport, "Editor's Introduction to *On War*," in Carl von Clausewitz, *On War*, ed. Anatol Rapoport (New York: Penguin, 1968), 11–79; and Anatol Rapoport, *The Origins of Violence: Approaches to the Study of Conflict* (Piscataway, NJ: Transaction Publishers, 1995).

[25] Antoine Bousquet, "Chaoplexic Warfare or the Future of Military Organization," *International Affairs (Royal Institute of International Affairs 1944–)* 84, no. 5 (September 2008): 919; James Der Derian, "Virtuous War/Virtual Theory," *International Affairs (Royal Institute of International Affairs 1944–)* 76, no. 4 (October 2000): 786; Paparone, *The Sociology of Military Science*, 18–20; and Jullien, *A Treatise on Efficacy*.

[26] Zweibelson, *Understanding the Military Design Movement*, 63–76.

[27] Haridimos Tsoukas, *Complex Knowledge Studies in Organizational Epistemology* (Oxford, UK: Oxford University Press, 2005), 220.

[28] Zweibelson, *Understanding the Military Design Movement*, 76–87, 179–91, 201–29; and Zweibelson, *Beyond the Pale*, 119, 137.

[29] Zweibelson, *Beyond the Pale*, xxiii–xxxv, 7–22, 51–64.

[30] *Operations*, Field Manual (FM) 3-0 (Washington, DC: Department of the Army, 2022); and *Planning and Orders Production*, FM 5-0 (Washington, DC: Department of the Army, 2022).

[31] Myriad doctrine writers might protest this statement. It is true that some terms are used in doctrine that come from complexity science, and some concepts show strong influence from complexity theories and sources. However, all these terms and concepts have been ripped away from their original context and meaning, forced into assimilation so that the overarching Newtonian-style ontology and epistemology remains consistent.

[32] Mark A. Bedau and Paul Humphreys, eds., *Emergence: Contemporary Readings in Philosophy and Science* (Cambridge, MA: MIT Press, 2008), 6, https://doi.org/10.7551/mitpress/9780262026215.001.0001.

[33] Tsoukas, *Complex Knowledge Studies in Organizational Epistemology*, 236, 238–39, 254–55.

[34] Ben Zweibelson, "One Piece at a Time: Why Linear Planning and Institutionalisms Promote Military Campaign Failures," *Defence Studies* 15, no. 4 (2015): 360–74, https://doi.org/10.1080/14702436.2015.1113667; and Ben Zweibelson, "Linear and Nonlinear Thinking: Beyond Reverse-Engineering," *Canadian Military Journal* 16, no. 2 (Spring 2016): 27–35.

[35] Robert Chia, "Reflections: In Praise of Silent Transformation—Allowing Change through 'Letting Happen'," *Journal of Change Management* 14, no. 1 (2014): 14, https://doi.org/10.1080/14697017.2013.841006; Jean-Pierre Protzen and David Harris, *The Universe of Design: Horst Rittel's Theories of Design and Planning* (Oxford, UK: Routledge, 2010), 55; and Zweibelson, *Beyond the Pale*, 98–106.

[36] Jullien, *A Treatise on Efficacy*.

[37] Peter Cornelius, Alexander van de Putte, and Mattia Romani, "Three Decades of Scenario Planning in Shell," *California Management Review* 48, no. 1 (2005): 92–109, https://doi.org/10.2307/41166329; Pierre Wack, "Scenarios: Uncharted Waters Ahead," *Harvard Business Review* (September 1985): 73–89; Angela Wilkinson and Roland Kupers, "Living in the Futures: How Scenario Planning Changed Corporate Planning," *Harvard Business Review* (May 2013): 119–27; Zweibelson, *Beyond the Pale*, 19–20, 41, 49, 78, 81, 88; and Zweibelson, "Linear and Nonlinear Thinking."

[38] Ben Zweibelson, "Why Do Militaries Stifle New Ideas?," *Contemporary Issues in Air and Space Power* 2, no. 1 (2024): 1–6, https://doi.org/10.58930/bp38138320.

[39] Berger and Luckmann, *The Social Construction of Reality*, 52; Fuller, *The Foundations of the Science of War*, 94–95; and Beatrice Heuser, *The Evolution of Strategy: Thinking Wat from Antiquity to the Present* (Cambridge, UK: Cambridge University Press, 2010), 100–10, https://doi.org/10.1017/CBO9780511762895.

[40] Yuval Noah Harari, *Sapiens: A Brief History of Humankind* (New York: Harper Perennial, 2018); and Julian Jaynes, *The Origins of Consciousness in the Breakdown of the Bicameral Mind* (Boston, MA: Houghton Mifflin, 2000), 126–45.

[41] Jullien, *A Treatise on Efficacy*.

[42] Zweibelson, *Beyond the Pale*, 97–115.

[43] Heuser, *The Evolution of Strategy*, 113–70.

[44] Henry C. Eccles, *Military Concepts and Philosophy* (New Brunswick, NJ: Rutgers University Press, 1965), 115.

[45] Eccles, *Military Concepts and Philosophy*, 115.

[46] Ben Zweibelson, *Reconceptualizing the Space Domain beyond Historic Perspectives of Warfare* (Maxwell AFB, AL: Air University Press, 2023), 32–33; Zweibelson, "The Singleton Paradox"; Nick Bostrom, *Superintelligence: Paths, Dangers, Strategies* (Oxford, UK: Oxford University

Press, 2016); and Nick Bostrom, "What Is a Singleton?," *Linguistic and Philosophical Investigations* 5, no. 2 (2006): 48–54. While these topics exceed the scope of this article, they represent emergent and disruptive developments concerning future war and technological pathways in the space domain and in artificial intelligence (AI). Unlike nuclear weapons, where humans design the ends for new and devastating weapons to become the means therein, a "Singleton" AI entity could redesign original programmer ends to those of its own design, potentially inaccessible to human controllers. The concerns of the space domain and a runaway "Kessler" scenario that prevents humanity from accessing low earth orbit is a separate yet equally disturbing emerging issue of domain-specific deterrence beyond the original nuclear equation. All of these examples break from all of recorded human history and organized violence in that the consequences of using the weaponry, or even of creating the weaponry, warrant some form of international regulation or collective nonproliferation.

[47] Chia, "Reflections"; James der Derian, "From War 2.0 to Quantum War: The Superpositionality of Global Violence," *Australian Journal of International Affairs* 67, no. 5 (2013): 570–85, https://doi.org/10.1080/10357718.2013.822465; and Zweibelson, *Beyond the Pale*, 207–80.

[48] Berger and Luckmann, *The Social Construction of Reality*, 49, emphasis added.

[49] John R. Searle, *The Construction of Social Reality* (New York: Free Press, 1995), 8.

[50] Searle, *The Construction of Social Reality*, 8.

[51] Rapoport, *The Origins of Violence*, 63.

[52] Some readers might vigorously object to this, and this article presents significant content and citations to demonstrate the multiple disciplines in which war cannot be reduced into principles or adhere entirely to a positivistic epistemology. Often, the most adherent defenders of the Newtonian war paradigm declare the enduring "nature" of war as scientifically and historically proven, while never presenting scientific evidence of such proofs. This presents what is termed "social paradigm incommensurability," where operators within one paradigm refuse to interpret complex reality unless it is done strictly within their paradigmatic preferences.

[53] Beatrice Heuser, *Reading Clausewitz* (London: Pimlico, 2002), 8.

[54] Zweibelson, *Beyond the Pale*, 97–115.

[55] Searle, *The Construction of Social Reality*, 33.

[56] Searle, *The Construction of Social Reality*, 33–34.

[57] Although premodern societies produced military forces comprised of fellow human beings to wage such conflicts, they rationalized how and why such wars occurred using ideological, mythological, and other supernatural constructs that controlled such events. Such rationalizations might be direct or indirect, such as an army on a crusade to claim back some divine territory, a prince declaring war against another kingdom based on perceived violation of some religious principles, or a knight agreeing to go to war based on societal values of duty, honor, and obligation that emanate from societal beliefs and values.

[58] James E. Mrazek, *The Art of Winning Wars* (New York: Walker, 1968), 125–41. It is of course dangerous to select one case study without accusations of historical "cherry picking." However, this pattern of one group applying a war paradigm against a different one, or of a dominant war paradigm inspiring a new alternative, is found throughout history. Before Europeans reached the New World, native populations waged war in a specific, often ritualized, and frequently limited manner. Vladimir Lenin's Russian Revolution inspired new adaptations of Marxist theory for irregular warfare, civil war, and revolutionary war that were unlike previous ones. Innovators such as Mao Zedong, Che Guevarra, Fidel Castro, and Võ

Nguyên Giáp adapted different forms of Marxist warfare against technologically and logistically superior opponents. The Taliban, the Islamic State, and other terrorist groups such as al Qaeda did the same, albeit not in a strict Marxist-inspired direction. Radical ecoterrorist groups such as the Earth Liberation Front and the Animal Liberation Front pursued different conflict logics, all oriented toward disrupting or challenging the dominant power and how that force understood conflict.

[59] The discussion on Marxism differing from modern capitalism and Westphalian nation-states requires significant research beyond the scope of this article. This is the focus of the author's third book currently in development. In social paradigm theory, Marxism as expressed in how Vladimir Lenin, Joseph Stalin, Mao Zedong, Fidel Castro, and Võ Nguyên Giáp applied it would correlate with the radical structuralist paradigm. Carl von Clausewitz, Antoine-Henri Jomini, Niccolò Machiavelli, and other core Western military theorists align with a functionalist paradigm. Whereas Western state-centric war theory posits that war is a method for state-on-state resolution of differences and is a natural, ongoing, and perpetual activity, Marxists hold to a different ontological position that war is the vehicle for societal transformation. Existing imperial powers use war to oppress the proletariat and weaker classes while expanding markets. Marxists able to activate class consciousness use revolutionary and civil war to overthrow capitalist states entirely. Ultimately, war becomes a transformative process to evolve humanity into a communist utopia where war is discarded as unnecessary and obsolete. This is a profound ontological difference between two different war paradigms, even though pro-communist and anticommunist battles use similar strategies, operations, and tactics.

[60] Balázs Forgács, "Mao and Giap on Partisan Warfare," *Academic and Applied Research in Military and Public Management Science* 18, no. 2 (2019): 31–38, https://doi.org/10.32565/aarms.2019.2.3 2019; and Andrew Bingham Kennedy, "Can the Weak Defeat the Strong?: Mao's Evolving Approach to Asymmetric Warfare in Yan'an," *China Quarterly* 196 (December 2008): 884–99, https://doi.org/10.1017/S0305741008001173.

[61] Without oversimplifying the Vietnam conflict, the Vietnamese Communists managed to accomplish in the twentieth century two distinct and unprecedented accomplishments. First, they were the first non-European force to decisively defeat a European power in battle, with a clear victory over the French in the Battle of Dien Bien Phu (1954). Since the Age of Imperialism, no non-European military had accomplished such a feat, with the Vietnamese Communist forces clearly operating with vastly inferior logistics, training, education, weaponry, and technology. They then went on to defeat the United States, one of two nuclear superpowers of the period, in the Vietnam War (1955–75). The American withdrawal from South Vietnam did not occur because of tactical failure. Instead, despite U.S. forces continuously winning tactical battle after tactical battle, U.S. policymakers and leadership had to follow Eccles's nuclear deterrence theory and assume a limited war defeat so that broader nuclear deterrence against the Soviet Union remained stable. The Soviet Union would undergo nearly the same artificial limitation in Afghanistan in the 1980s, where they too would be defeated by a far less technologically or logistically capable adversary.

[62] Rapoport, *The Origins of Violence*, 469.

[63] There were some isolated Danish saboteurs and resistance fighters who did engage in conventional organized violence, but overall the Danish society rejected these activities. The Danish people held to a cultural pacifism yet did not comply with German demands as other decidedly neutral nations would.

[64] Berger and Luckmann, *The Social Construction of Reality*, 52, emphasis in original.

[65] Anatol Rapoport, *Fights, Games, and Debates* (Ann Arbor: University of Michigan Press, 1974), vii–viii, https://doi.org/10.3998/mpub.9022.

[66] Certainly, many creatures such as horses, working dogs, carrier pigeons, and Hannibal's famous elephants have participated in wars. Yet, they knew not what they were doing aside from immediate, proximate affairs. Hannibal's elephants could not suggest different strategies or tactics to pursue, nor does a working dog have any inkling of what the unit's mission is.

[67] Bostrom, *Superintelligence*; Ray Kurzweil, "Merging with the Machines: Information Technology, Artificial Intelligence, and the Law of Exponential Growth," *World Futures Review* 2, no. 1 (2010): 61–66, https://doi.org/10.1177/194675671000200107; Aura Schussler, "Artificial Intelligence and Mind-Reading Machines—Towards a Future Techno-Panoptic Singularity," *Postmodern Openings* 11, no. 4 (2020): 334–46, https://doi.org/10.18662/po/11.4/239; Jacob Shatzer, "Fake and Future 'Humans': Artificial Intelligence, Transhumanism, and the Question of the Person," *Southwestern Baptist Journal of Theology* 63, no. 2 (2021): 127–46; and Zweibelson, "Whale Songs of Wars Not Yet Waged."

[68] Tsoukas, *Complex Knowledge Studies in Organizational Epistemology*, 73; and Chia and Holt, *Strategy without Design*, 23–29, 51–56.

[69] Michal Krelina, "Quantum Warfare: Definitions, Overview and Challenges," *EPJ Quantum Technology* 8, no. 24 (2021): https://doi.org/10.1140/epjqt/s40507-021-00113-y.

[70] Zweibelson, "Linear and Nonlinear Thinking"; and Ben Zweibelson, "Rose-Tinted Lenses: How American Functionalist Strategy Inhibits Our Appreciation of Complex Conflicts," *Defence Studies Journal* 16, no. 1 (2016), 68–88: https://doi.org/10.1080/14702436.2016.1147924.

[71] Chia and Holt, *Strategy without Design*, 29–47; and Jullien, *A Treatise on Efficacy*.

[72] Siniša Malešević, *The Sociology of War and Violence* (Cambridge, UK: Cambridge University Press, 2010), 8–14, https://doi.org/10.1017/CBO9780511777752; and Martin van Creveld, *The Training of Officers: From Military Professionalism to Irrelevance* (New York: Free Press, 1990), 20.

[73] Felix Gilbert, "Machiavelli: The Renaissance of the Art of War," in *Makers of Modern Strategy: From Machiavelli to the Nuclear Age*, ed. Peter Paret, Gordon A. Craig, and Felix Gilbert (Princeton, NJ: Princeton University Press, 1986), 13.

[74] Heuser, *The Evolution of Strategy*, 54–110.

[75] Heuser, *The Evolution of Strategy*, 54–72.

[76] Heuser, *The Evolution of Strategy*, 64–75; Rapoport, "Editor's Introduction to *On War*"; and Gilbert, "Machiavelli," 13.

[77] Attempting to summarize all human conflict in one article is impossible and potentially an absurdity for military historians who devote multiple volumes addressing just a single period of war. That said, readers should accept these oversimplifications as necessary steppingstones for what this article attempts to present. Otherwise, the overarching arguments clarified in the final sections of this article, if presented alone, would appear incomplete and incoherent.

[78] W. B. Gallie, *Philosophers of Peace and War: Kant, Clausewitz, Marx, Engles, and Tolstoy* (Cambridge, UK: Cambridge University Press, 1978), 37, 52–53, https://doi.org/10.1017/CBO9780511558450; B. H. Liddell Hart, *Strategy*, 2d ed. (New York: Plume, 1991), 340–41; Peter Paret, *Clausewitz and the State: The Man, His Theories, and His Times* (Princeton, NJ: Princeton University Press,1985), 162; and Peter Paret, ed., *Makers of Modern Strategy: From Machiavelli to the Nuclear Age* (Princeton, NJ: Princeton University Press, 1986), 204.

[79] Rapoport, *The Origins of Violence*, 179.

[80] Heuser, *The Evolution of Strategy*, 104–6.

[81] Rapoport, "Editor's Introduction to *On War*"; and Rapoport, *The Origins of Violence*, 179–80.

[82] Rapoport, *The Origins of Violence*, 267.

[83] The author's third book in development dedicates several chapters exploring this topic.

[84] Rapoport, *The Origins of Violence*, 159.

[85] Paret, *Clausewitz and the State*, 7.

[86] Paret, *Clausewitz and the State*, 84.

[87] Although several prominent military scholars disagree with this, most military activities in World War II demonstrate that many primary stakeholders and armed forces drew from a blend of Clausewitzian, Jominian, and related concepts. Interwar theorists such as J. F. C. Fuller and B. H. Liddell-Hart would critique Clausewitz's theories based on outcomes in World War I, while game theorist and conflict philosopher Anatol Rapoport would in the 1960s–80s critique Clausewitz and whether the relevance of his original ideas extended beyond World War I.

[88] Eccles, *Military Concepts and Philosophy*, 115.

[89] Heuser, *The Evolution of Strategy*, 46–53, 182, 192–97.

[90] Forgács, "Mao and Giap on Partisan Warfare," 32–33; Edward Friedman, "Neither Mao, nor Che, the Practical Evolution of Revolutionary Theory: A Comment on J. Moreno's 'Che Guevara on Guerrilla Warfare'," *Comparative Studies in Society and History* 12, no. 2 (1970): 135–37, https://doi.org/10.1017/S0010417500005703; Kennedy, "Can the Weak Defeat the Strong?"; and Craig Whiteside, "New Masters of Revolutionary Warfare: The Islamic State Movement (2002–2016)," *Perspectives on Terrorism* 10, no. 4 (2016): 4–18.

[91] Jullien, *A Treatise on Efficacy*; and J. C. Wylie, *Military Strategy: A General Theory of Power Control* (Annapolis, MD: Naval Institute Press, 1989).

[92] Chia, "Reflections," 14.

[93] Eccles, *Military Concepts and Philosophy*, 115.

[94] *Ready Player One*, directed by Steven Spielberg (Hollywood, CA: Warner Bros. Pictures, 2018).

[95] Although a modern rationalization of this tension suggests that if an opponent were to realize that they were losing in the nonphysical domains, they might opt to shift to traditional and physical forms of organized violence to prevent systemic defeat. However, the phantasmal qualities of such a technologically advanced future war would potentially obscure the conflict and the trajectory of the violence from allowing opponents to make such a decision until it is too late. In other words, the window for physical action may be fleeting or possibly irrelevant. This becomes deeply concerning if our social reality becomes more associated with a virtual world, despite our physical bodies requiring the actual world to survive.

[96] This addresses autonomous spacecraft with AGI, not exquisite narrow AI. Some advanced narrow AI might have a wide range of decisions and authorities, but the programming will remain nested in human programming (and biases). AGI meets or exceeds a human operator in every measurable way, meaning that such an entity could and should think about conflict, including tactics but also abstract ideas, differently. Such an autonomous system might develop processes, behaviors, and techniques entirely beyond the intent of the original code or human programmers.

[97] Jullien, *A Treatise on Efficacy*; Cheng Man-ch'ing, *Lao-Tzu: "My Words Are Very Easy to Understand": Lectures on the Tao Teh Ching by Cheng Man-ch'ing*, trans. Tam C. Gibbs (Berkley,

CA: North Atlantic Books, 1981), 65–69, 109, 179–80, 201, 205; and Sun Tzu, *The Art of War: Complete Text of Sun Tzu's Classics, Military Strategy History, Ancient Chinese Military Strategist*, Deluxe Collection Ed., *1*, trans. Lionel Giles (independently published, 2022).

[98] Bousquet, *The Scientific Way of Warfare*, 46–55.

[99] Paret, *Clausewitz and the State*; and Paret, *Makers of Modern Strategy*.

[100] Marxists posit that social reality is historically determined, where wars are part of this iterative, progressive struggle between economic classes. However, they hold to a normative view that activists, once aware and capable of stimulating societal transformation, can use revolutionary war to change social reality. This is accomplished by overthrowing capitalistic societies with communist ones. The nation-state and class systems are eventually eliminated. The last state to fall will be the final one to use a military instrument of power. This final battle (termed an *eschatological worldview on war*) is also the last time that war will exist for humanity, as the future (normative) reality for everyone will no longer require violent conflict. War will cease to exist entirely from this paradigm's perspective. The Marxist belief that this must occur is as vigorously embraced as those of Newtonian war theorists who insist that "centers of gravity are real" and that "there is an enduring nature of war."

[101] Bousquet, *The Scientific Way of Warfare*; and Fuller, *The Foundations of the Science of War*, 227.

[102] Robert Chia and Andreas Rasche, "Epistemological Alternatives for Researching Strategy as Practice: Building and Dwelling Worldviews," in *Cambridge Handbook of Strategy as Practice*, eds. Damon Golsorkhi et al. (Cambridge, UK: Cambridge University Press, 2024, forthcoming), 5–8, https://doi.org/10.1017/CBO9781139681032.003; Paparone, *The Sociology of Military Science*, 20, 30–31, 79, 197–98; and Paret, *Clausewitz and the State*, 8, 84.

[103] Brian P. McLaughlin, "The Rise and Fall of British Emergentism," in *Emergence: Contemporary Readings in Philosophy and Science*, eds. Mark A. Bedau and Paul Humphreys (Cambridge, MA: MIT Press, 2008), 19–21, https://doi.org/10.7551/mitpress/9780262026215.003.0003; Paparone, *The Sociology of Military Science*, 35; and John R. Searle, "Reductionism and the Irreducibility of Consciousness," in *Emergence*, 69–70, https://doi.org/10.7551/mitpress/9780262026215.003.0005.

[104] Paparone, "Critical Military Epistemology," 127–28; and *Joint Operations*, Joint Publication 3-0 (Washington, DC: Joint Chiefs of Staff, 2018), I-12.

[105] *Joint Operations*, I-13.

[106] *Joint Operations*, I-13–I-14.

[107] Philip W. Anderson, "More Is Different: Broken Symmetry and the Nature of the Hierarchical Structure of Science," *Science* 177, 4047 (4 August 1972): 393, https://doi.org/10.1126/science.177.4047.393.

[108] Fuller, *The Foundations of the Science of War*, 63–64.

[109] Anderson, "More Is Different," 393.

[110] Anderson, "More Is Different," 393–94; Bousquet, *The Scientific Way of Warfare*, 11–18; and Paparone, *The Sociology of Military Science*, 18–21.

[111] Jochen Fromm, "Types and Forms of Emergence" (research paper, Distributed Systems Group, Electrical Engineering and Computer Science, Universitat Kassel, Germany, 13 June 2005), 1–23.

[112] Fromm, "Types and Forms of Emergence."

[113] Fromm, "Types and Forms of Emergence."

[114] Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 3d ed. (Chicago: University of Chicago Press, 1996).

[115] Roman Johann Jarymowycz, *Tank Tactics: From Normandy to Lorraine* (Boulder, CO: Lynne Rienner, 2001), 68.

[116] Peter Layton, *Fighting Artificial Intelligence Battles: Operational Concepts for Future AI-Enabled Wars*, Joint Studies Paper Series no. 4 (Canberra: Australian Defense College, 2021), 9; Judea Pearl, "The Limitations of Opaque Learning Machines," in *Possible Minds: 25 Ways of Looking at AI*, ed. John Brockman (New York: Penguin, 2019), 15–19; Paul Scharre, *Army of None: Autonomous Weapons and the Future of War* (New York: W. W. Norton, 2018), 83; and Shatzer, "Fake and Future 'Humans'," 133.

[117] Aron Dombrovszki, "The Unfounded Bias against Autonomous Weapons Systems," *Informacios Tarsadalom* 21, no. 2 (2021): 15.

[118] Bostrom, "What Is a Singleton?"; and Bostrom, *Superintelligence*, 14–25.

[119] Zweibelson, "The Singleton Paradox"; and Zweibelson, "Whale Songs of Wars Not Yet Waged."

[120] This discounts AI that, at the prompting of human programmers, is making exceptional bounds on producing near-equivalent creations that may quickly exceed human accomplishment. Additionally, humans are likely entering a reality in which they will no longer be able to distinguish what is human-created versus what is entirely of artificial design.

[121] Bostrom, *Superintelligence*, 138.

[122] Zweibelson, "The Singleton Paradox," 13–18, 29–34.

[123] The scale for potential AI self-development is often lost here for many unfamiliar with this technology. Theoretically, we as humans can understand and design intelligence tests for the widest range of possible human capabilities, from the least intelligent human to the most intelligent, such as Albert Einstein. Einstein's intelligence quotient (IQ) was estimated to be around 160, with the average human scoring 100 and perhaps the most gifted minds able to reach 180 on such a scoring system. That said, this system is designed for human intelligence. We cannot scale this to comprehend an AGI scoring 500 or 1,500 or 10,000 on such a test, as the scale essentially "breaks" once we get past the smartest scoring people we can evaluate. An AGI with double our intelligence may have some qualities that can be understood, predicted, or negotiated with as near-equals. An AGI with five times that number may seem more like a god—or, worse still, a demon.

[124] Bostrom, *Superintelligence*, 34, 116, 140–50.

[125] Zweibelson, "The Singleton Paradox," 34–37.

[126] Bostrom, *Superintelligence*, 150.

[127] Zweibelson, "The Singleton Paradox," 29–37.

[128] Zweibelson, "Whale Songs of Wars Not Yet Waged."

[129] Paparone, *The Sociology of Military Science*, 19–20, 38–41.

[130] Zweibelson, "Whale Songs of Wars Not Yet Waged," 48–50.

[131] Bostrom, *Superintelligence*, 134–38, 140–41; and Zweibelson, "The Singleton Paradox."

[132] Zweibelson, "The Singleton Paradox"; and Zweibelson, "Whale Songs of Wars Not Yet Waged."

[133] Alex Seitz-Wald, "Democratic Operative Admits to Commissioning Fake Biden Robocall that Used AI," NBC News, 25 February 2024.

[134] Gerrit De Vynck and Will Oremus, "OpenAI Shows off Lifelike Videos Generated by Sora, Its New AI Tool," *Washington Post*, 15 February 2024.

[135] Ben Cost, "ChatGPT Update Tricks Human into Helping It Bypass CAPTCHA Security Test," *New York Post*, 17 March 2023.

[136] Anna Oakes and Diego Senior, "People Are Falling in Love with Chatbots," *Boston Globe*, 14 February 2023.

[137] Using the term *paradigm* is difficult, in that social paradigm theory addresses human collective and social thinking and action. While humans will likely create AI capable of becoming sentient beings that can further transform their own design to novel ends beyond the human creators' comprehension, the term paradigm might be inadequate. Indeed, perhaps all human language may be insufficient for where alien AI thinking might advance toward.

[138] Jean Baudrillard, *The Gulf War Did Not Take Place*, trans. Paul Patton (Bloomington: Indiana University Press, 1995).

[139] Zweibelson, *Reconceptualizing the Space Domain beyond Historic Perspectives of Warfare*.

[140] This does not suggest that special operations forces or the U.S. Space Force intend to hand control of war over to AI or that they are wittingly ushering in some radical transformation of social reality. Instead, it is more accurate to offer that humanity is moving toward a future where our current social needs are increasingly met with sophisticated technology, to include the security challenges found across the terrestrial domains but also in newer, less familiar domains such as space and cyber. In attempting to keep the legacy system sustained, this nexus of military powers and domains will likely require greater investment of advanced technology, whether AI, quantum, spacecraft, or some other advanced requirement, to outpace threats and competitors. This in turn may stimulate the rise of a quantum warfare race, a Singleton AI race toward singularity, or a transhuman race toward superhuman weapons that develop their own new ends.

[141] Baudrillard, *The Gulf War Did Not Take Place*.

[142] Jean Baudrillard, *Simulacra and Simulation*, trans. Sheila Glaser (Ann Arbor: University of Michigan Press, 2001), https://doi.org/10.3998/mpub.9904.

[143] *The Matrix*, directed by Larry Wachowski and Andy Wachowski (Hollywood, CA; Warner Bros. Pictures, 1999).

[144] Andrew R. Chow, "AI-Human Romances Are Flourishing—And This Is Just the Beginning," *Time*, 23 February 2023; and Oakes and Senior, "People Are Falling in Love with Chatbots."

[145] Orson Scott Card, *Ender's Game* (New York: Tor Books, 1985).

[146] Fromm, "Types and Forms of Emergence."

[147] Paparone, "Critical Military Epistemology," 125–28.

[148] Zweibelson, "The Singleton Paradox."

[149] Russell Ackoff, "On the Use of Models in Corporate Planning," *Strategic Management Journal* 2, no. 4 (October–December 1981): 359.

[150] This is an oversimplification of Burrell and Morgan's social paradigm theory and is only briefly presented in this article to illustrate the ontological and epistemological differences between functionalists (Western, Westphalian, Clausewitzian, Newtonian thinking on conflict) and radical structuralists (Marx, Engels, Lenin, Mao, Giap, Castro, and those associated with revolutionary war for socialist or communist ideals). There are other social paradigms that can also be applied here. This is the focus of the author's third book currently in production.

[151] Ernest Hemmingway, *The Sun Also Rises* (New York: Charles Scribner's Sons, 1926).

[152] There are a few models and metaphoric devices currently used in discussing how space, cyberspace, and special operations are combining systemically in new configurations for war. The author further explores these concepts in Zweibelson, "Breaking the Newtonian Fetish."