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Reimagining War in the 21st Century

From Clausewitz to network-centric warfare

Manabrata Guha

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network-centric warfare

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Reimagining War in the 21st Century

This book interrogates the philosophical backdrop of Clausewitzian notions of war, and asks whether modern, network-centric militaries can still be said to serve the 'political'.

In light of the emerging theories and doctrines of Network-Centric War (NCW), this book traces the philosophical backdrop against which the more common theorizations of war and its conduct take place. Tracing the historical and philosophical roots of modern war from the 17th Century through to the present day, this book reveals that far from paralyzing the project of re-problematizing war, the emergence of NCW affords us an opportunity to rethink war in new and philosophically challenging ways.

This book will be of much interest to students of critical security studies, social theory, war studies and political theory/IR.

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To Madhura

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Table of Contents

<i>Acknowledgments</i>	vii
Introduction	1
<i>Approaching the problematic of war</i>	3
<i>A failure of imagination: NCW's Limit-Condition</i>	9
<i>An outline of the book</i>	11
1 Prelude to Clausewitz	17
<i>A historico-philosophical background</i>	17
<i>Classical military theory— an evolutionary overview</i>	23
<i>A kehr to the non-human</i>	26
<i>Mind(ing) the gap: Between Guibert and Jomini</i>	30
<i>Jomini's science of the "Art of War"</i>	34
<i>A preliminary assessment</i>	37
2 Clausewitz and the Architectonic of war	42
<i>The romance of Clausewitz</i>	43
<i>Clausewitz, methodologizing . . .</i>	44
<i>Clausewitz, theorizing . . .</i>	46
<i>Clausewitz, strategizing . . .</i>	48
<i>(de)Constructing war, absolute and real . . .</i>	50
<i>The Clausewitzian mesh and the net, architectonically speaking . . .</i>	57
<i>In Fortuna's camp</i>	60
<i>The face of chance</i>	65
<i>Strategizing chance</i>	71
<i>Clausewitz: Q.E.D.</i>	84
3 Machining (network-centric) war	86
<i>Behind the network paradise</i>	87

vi *Table of Contents*

<i>NCW: A preliminary overview</i>	89
<i>Semantic implications of NCW</i>	90
<i>The technologization of discourse in the context of NCW</i>	93
<i>At the edge of chaos . . .</i>	97
<i>On networks</i>	101
<i>On netwars</i>	104
<i>Machinic war</i>	107

4 Theorizing war in the Age of Networks 110

<i>A new strategic commons: A wide-angle view of NCW</i>	110
<i>Two orders of strategy</i>	115
<i>The first order</i>	116
<i>The second order</i>	121
<i>NCW: . . . and here is the "beef" . . .</i>	124
<i>Inside/outside the Clausewitzian legacy</i>	126

5 Concept-war 133

<i>In an "Other" theater of war</i>	135
<i>On war and war-machines: Interrogating the Deleuze-Guattarian thesis</i>	149
<i>Five propositions concerning concept-war: A speculative exercise</i>	157
<i>Concept-war: A minoritarian tactic</i>	159
<i>Conclusion</i>	164

Conclusion 168

<i>Notes</i>	174
<i>Bibliography</i>	212
<i>Index</i>	229

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Introduction

The former US Chairman of the Joint Chiefs of Staff, General Peter Pace, United States Marine Corps (USMC), in his assessment of the *Quadrennial Defense Review* (QDR) 2006, remarked that “[a]ny attempt to predict the future security environment of 2025 is inherently difficult . . . Given the dynamics of change over time, we must develop a mix of agile and flexible capabilities to mitigate uncertainty.”¹ He also noted that the QDR acknowledges that “victory in this long war depends on information, perception, and how and what we communicate as much as [the] application of kinetic effects.”² While General Pace’s immediate reference was to the war on terrorism, the sense of uncertainty and indeterminacy that permeates his assessment points to the growing recognition that “victory” is as transient as the other elements that constitute this emerging condition. When considered in the context of the rationally predictable security calculus of the now fading Cold War strategic paradigm, this recognition represents a distinct shift in how global militaries – particularly the US military and defense establishment – have begun to perceive the emerging strategic environment. The 2006 QDR describes this shift in the following terms:

- From a peacetime tempo – to a wartime sense of urgency
- From a time of reasonable predictability – to an era of surprise and uncertainty
- From single-focused threats – to complex challenges
- From nation-state threats – to decentralized network threats
- From conducting war against nations – to conducting war in countries we are not at war with (safe havens)
- From large institutional forces (tail) – to more powerful operational capabilities (teeth).³

What is interesting about this description is that perhaps for the first time in the history of the modern military, the military machine – a state-owned and run apparatus – is explicitly thinking of and, in some cases, even operating outside the orbit of the State. Thus, the QDR 2006 refers to, among other things, the shift “from nation-state threats – to decentralised network threats” and of “conducting wars in countries we are not at war with.”

2 Introduction

For defense, security, and military strategists—working in the context of the late twentieth-century Revolution in Military Affairs (RMA), the emerging theories and doctrines of Network-Centric Warfare (NCW), and of their not-so-encouraging application on the battlefields of the twenty-first century—this poses a problem of immense strategic significance. At the heart of the matter lies the concern that the shift which the 2006 QDR refers to may not simply be an indicator of the changing character of war, it could also be an intimation that perhaps the hitherto inextricable connection between war and “the political” may be increasingly becoming tenuous. Thus, the questions that confront these theorists and strategists of war are nothing less than the following: What if, in its most extravagant, uninhibited and originary sense, war does not serve the State? In other words, what if war “is not an instrument of any kind, least of all a political one”?⁴ Further, what if, war is nothing less, but also nothing more, than a metamorphosis of forces; their relative decomposition from strategic ensembles and purposes, towards tactical fragments and initiatives? These, in turn, lead to a series of increasingly disturbing questions such as: What if the otherness “of war to the political” is like that “of the uncircumscribed to the field of its potential circumscription”?⁵ What if war is “absolutely” immanent, that is to say, what if war is not only immanent to particular circumscriptions – the State, the political, the human, etc. – but, more importantly, it is immanent *in itself*?⁶

Of course, the majority of the theorists and strategists of war do not consider these questions and concerns in precisely this way. Instead, they opt to ask and investigate more practical questions such as: Are developments in the emerging fields of Information and Communication Technologies (ICTs) and the “new sciences” (chaos theory, the complexity and nano-scale sciences, molecular biology, etc.) subverting the canonical sanctity of the Clausewitzian regime of thought? Is our growing experience of the so-called Global War on Terror(ism) (GWOT) fracturing the hitherto seemingly stable and near-universal Clausewitzian paradigm of war? Are our experiences in the emerging net-centric battlespace rendering the Clausewitzian theorization of war and combat unrecognizable? There is, however, no mistaking the fact that behind the façade of these seemingly practical questions, that what is really at stake is:

[H]ow . . . [do] . . . we conceive of being [and more importantly, of *becoming*] when the differential-space between the organic and the machinic [in a limited sense, the technological] dissolves . . . when reality is folded into virtuality, when the body morphs, and computer networks suck knowledge into a digital monad? [In other words,] . . . [h]ow do we think if thinking is chaotic at its core?⁷

The import of these questions notwithstanding, they are, more often than not, dismissed without a second thought.⁸ The principal reason for such a summary dismissal is because they are regarded as being fanciful speculations that run against the grain of not simply the study of war and its conduct, but also because they, albeit indirectly, purport to interrogate the foundational principles that underwrite our

conceptualization and understanding of International Relations and of what it means “to be political.” But as our most recent experiences at the strategic, operational, and tactical levels of the wars in Iraq and Afghanistan show, despite the increasingly widespread and near-ubiquitous use of ICT-enabled weapon-platforms and sophisticated systems-enabling planning and analysis tools we remain none the wiser about how to deal with “the unknowns.” Of course, the more conservative theorists and strategists would see in this the affirmation of their core tenet that the nature of war is immutable and that “the unknowns,” as Clausewitz theorized, are an intrinsic and integral element of the phenomenon of war and thus would have to be efficiently “managed.” Regardless, however, the question still stands: Are we at what Ansell Pearson refers to as a “weird point in history” where the onto-thanato-politico architectonic of war (as we know it) is increasingly proving insufficient to deal with the “unknown unknowns?”

Approaching the problematic of war

A general survey of the current literature on war and its conduct shows that there are two primary views regarding NCW. For the more conservatively inclined, NCW is simply the mode of operability that accompanies the digitization of the *conduct* of war.⁹ This point of view holds that while strategy, operations, and tactics may be executed more efficiently – perhaps even differently – with the help of high-speed ICTs (that is to say, if they are digitized), war – the martial context in which these actions take place – remains axiomatic, immutable and *a priori*.¹⁰ In other words, it is suggested, “[t]here appears to be a unity to all strategic experience, regardless of period, polity, or technology”¹¹ and history, from this point of view, is the reservoir of approximate-precedents attesting to the claim that while the character of war is subject to change, its nature must be, indeed is, eternal.¹² For the conservative theorists, NCW thus represents merely one such change in the character of war.¹³

The more radical proponents of the theories of NCW, however, assert that “[a] cursory look into the development of some of the most time-honoured ideas that comprise the principles [of war] will find historical contexts that are completely foreign to us today.”¹⁴ Buoyed by the productive (which in some cases turn out to be debilitating) capabilities offered by emerging ICTs, the proponents of NCW suggest that an awareness, that is to say, the experience, of these changes “will, in the coming decade . . . unfetter us from the requirement to be synchronous in time and space . . .”.¹⁵ They insist that the “time we live in [is] unlike any other, a time when the pace of change demands that *we change* . . . it is a time when our analysis methods are becoming less and less able to shed light on the choices we face.”¹⁶ Thus, while discussing these “new dynamics and attributes of conflict,” or simply, of “war,” in the Information Age, Arquilla and Ronfeldt note that

[T]he information revolution is altering the nature of conflict across the spectrum . . . First, this revolution is favouring and strengthening network forms of organization, often giving them an advantage over hierarchical forms . . . Second, as the information revolution deepens, the conduct and outcome of

4 Introduction

conflicts increasingly . . . revolve around “knowledge” . . . Adversaries are learning to emphasize “information operations” and perception management . . . These propositions cut across the entire conflict spectrum (and thus) Information-age threats are likely to be more diffuse, dispersed, multi-dimensional, non-linear, and ambiguous.¹⁷

They conclude their assessment by suggesting that:

[F]or myriad of reasons, the world is entering – indeed, it has already entered – a new epoch of conflict (and crime). This epoch will be defined not so much by whether there is more or less conflict than before, but by new dynamics and attributes of conflict . . . [C]hanges will involve high-tech sensors and weapons that can enable both stand-off and close-in swarming attacks . . . The protagonists . . . will be more widely dispersed . . . more decentralized . . . and more surreptitious. Offense and defense will be blended. The temporal and spatial dimensions of conflict will be compressed.¹⁸

Given this operational spread – unlike in the Industrial Age when war and the battlefield were primarily located at the site of the physical and the ideological, in the Information Age – spanning across three domains identified as the physical, the cognitive, and the informational¹⁹ – war, it is contended, has taken on a richer, deeper, wider, and omni-dimensional meaning.²⁰ Thus, when, among others, Arquilla and Ronfeldt discuss this “new epoch of conflict” – in terms of cyberwar and netwar²¹ – there is no mistaking the fact that for them war – in the Digital-Info Age – while being grounded within the political and enabled by the technological, is a matter of “in-formation.”²² This suggests a subtle, but significant, shift in the understanding of war. It is also an intellectual project that is often suspected and accused of attempting to distort and, in the more extreme cases, even make irrelevant the canonical sanctity of the Clausewitzian, sub-political, understanding of war.

Further, the more radical theorists of NCW seem to – indeed, intend to – deliberately conflate war and the battlespace. The picture that they paint of war/battlespace in the twenty-first century largely consists of exponentially proliferating ensembles of a diverse set of weapon-platforms coupled with networked computers processing data at petaflop speed.²³ When coupled with a myriad of cross-spectrum data/information-acquisition sensors, these technological ensembles act as receptacles and transmitters of information operating at the speed of light.²⁴ In such “technological valhallas,” the traditional indicators of speed and time are expected to collapse onto and into each other thus rendering the more familiar gaps between the strategist’s projections, the general’s map table, and the battle increasingly obsolete. As a consequence, in battlespace (or war) of the twenty-first century, it is asserted, the hunter and the hunted, the here and the there, and the actual and the virtual are experienced and projected as complex-becomings, that is to say, they are always *becoming in-distinguishable*.²⁵ This goes some way to explain why some military theorists and scholars of strategy and war are urging for the abandoning of

the paradigm in which “we still persist in studying a type of warfare that no longer exists and that we shall never fight again.”²⁶ Indeed others, like Szafranski, when discussing war in the Age of Information, even call for different modes of response to what he suggests are the emerging epistemological challenges that modern-day governments and societies have to contend with.²⁷ It is, therefore, not uncommon to hear reiterated that war – battlespace – is the most complex phenomenon of the twenty-first century and, as such, it points to the emergence/production of a new “strategic commons.”²⁸

In the literature on modern war and strategy it is also common to find these two views generally opposing each other. It is worth pointing out, however, that this opposition is rather deceptive at a number of interesting levels. Thus, for example, a closer look at the sometimes caustic and animated debates that rage between these supposedly differing points of view shows that they actually share a common imagination wherein war, conceptually and as a phenomenon, remains an affair of the State and is necessarily conceived of, contextualized within, and expressed as a political event.²⁹ In this, the martial imagination of the proponents of the NCW thesis, and that of their conservative counterparts, remains captive to the State’s ability (in the context of “the political”) to imagine, articulate, own, control, and manage, *being martial*.³⁰ Thus, it could be said, when considered in the context of the ubiquitous emergence and proliferation of ICTs in the domain of war and its conduct, that if there is indeed an epistemic shift – as some of the NCW theorists suggest is the case – then it is at best limited to one that points to a transformation in the understanding of the *conduct of war* in terms of mass, force, and speed, to one that prioritizes information-flows, grids and meshes, and effects-based operations.

In a recent and well received book that investigates the importance and growing use of robots in war, Peter Singer decries the late Admiral Arthur Cebrowski who headed the Office of Force Transformation and the former US Secretary of Defense, Donald Rumsfeld, as being “false prophets” given their insistence and single-minded approach to developing and implementing the project of force transformation and the principles of NCW.³¹ While it is not necessary for us to contest Singer’s opinion, we will, however, suggest that these two individuals – during some of the darkest moments in recent US history – spearheaded a project of some philosophical significance. Much of what they attempted to articulate and implement was, of course, obscured by the circumstances under which the former Secretary of Defense had to quit his office and by the untimely demise of the Admiral. Yet, neither the ambition, nor the import of what precisely they were attempting to do can be ignored.

Take, for example, what Secretary Rumsfeld had publicly expressed in 2002. Among other things, he had said that:

[W]e need to change not only the capabilities at our disposal, but also *how we think about war*. All the hi-tech weapons in the world will not transform the US Armed Forces unless *we transform the way we think, the way we train, the way we exercise and the way we fight*.³²

6 Introduction

Further, in the context of the force transformation project, he had added “. . . one . . . not only anticipates the future, but also seeks to create it.”³³ The Admiral, expanding on the force transformation project, noted that:

Transformation is foremost a continuing process. It does not have an end point. *Transformation is meant to create or anticipate the future. Transformation is meant to deal with the co-evolution of concepts, processes, organizations and technology. Change in any one of these areas necessitates change in all. Transformation is meant to create new competitive areas and new competencies.* Transformation is meant to identify, leverage and *even create new underlying principles for the way things are done.* Transformation is meant to identify and leverage new sources of power. The overall objective of these changes is simply –sustained . . . advantage in warfare.³⁴

A closer look at the words of the Secretary and the Admiral indicates that the strategic object of war identified by them reveals itself as a composite of two “lines of flight” that are of interest to us. First – the one that lends itself to some semblance of instrumentalization by the State – is the production, maintenance, and expansion of strategic ensembles (futures, the State, the political, NCW, etc.) or, of efficiently managing a potentially unstable matrix that links people, processes, organizations, and technologies. This, to all intents and purposes, is the political object of war. The second, however, is a more problematic one for it premises itself on what can best be described as a “haptic” understanding of war,³⁵ which the Admiral cryptically expressed by noting that “relocating the human on the battlefield could change everything.”³⁶ The NCW theorists are themselves often at pains to express this (and in some cases to even come to grips with it). Thus, we find leading NCW theorists such as Alberts, Garstka, and Stein – invoking the Santa Fe Institute’s research into complex adaptive systems – attempting to articulate their understanding of war and its conduct in terms of “coevolution.”³⁷ In their words, they “apply this logical construct [coevolution] to the domain of warfare where *concepts of operation* coevolve in response to changes in their ecosystem.”³⁸ Admiral Cebrowski, expanding on this, further added: “combining new technology with new operational concepts can have [a] profound impact on how information *energy* can be applied on the battlefield.”³⁹ The Admiral’s cryptic words would thus suggest that war (battlespace), wherein politico-strategic ambitions and object(ive)s take a form and shape, is an environment-in-transformation or an *environment that is always becoming*.

By emphasizing on, among other things, transformation and on the need to be transformational, Admiral Cebrowski thus revealed that the strategic object of war within the NCW context is not simply about creating futures – by fabricating and deploying strategic ensembles within a specific context – it is also about (re)producing, commanding, controlling and managing the context wherein such fabrications and deployments take place. Thus the significance of the Admiral’s words: “. . . *create new underlying principles for the way things are done.*” It is in this sense that the claims made by the enthusiasts of NCW – that war in the Information Age

is “new” – is, to some extent, justified for, since Clausewitz, this is arguably the first such attempt to transform the very understanding of war.⁴⁰ Quite overtly then, these NCW thinkers are not simply attempting to predict the course of future war, but are also engaged in the designing and fashioning of our very imagination, understanding, and experience of war. In this way, the theorists of NCW are – inadvertently or otherwise – sketching out, that is to say, drawing, a moving and morphing diagram of their notion of a post-human martial corporeality not simply for and in the Digital Age, but as the new and inescapable paradigm of the emerging network societies of the Information Age.

But then again, we come across the following:

[T]he First Company of the 12th Armored Cavalry Regiment prepared for virtual battle . . . [A]t the Combined Arms and Tactical Training Center (CATTC) in Fort Knox, KY., the troops prepared to enter SIMNET – a virtual war delivered via network links. With the almost Disney-like mimicry typical of SIMNET operations, the warriors were briefed in an actual field command-post . . . But the exact enemy tactics were obscured by the fog of war . . . Bravo Platoon was the first to spot the approaching enemy scouts . . . Bravo Platoon saw red and yellow impacts spike their hillside landscape, and a vicious crump of high explosives burst from the Perceptronics audio simulators. As the engagement proceeded, dead men began to show up in the CATTC video classroom. Inside the simulators, their vision blocks had gone suddenly blank with the onset of virtual death . . . [I]n CATTC’s virtual Valhalla, however, a large Electrohome video display unit showed a comprehensive overhead map of the entire battlefield . . . [T]he dead tank crews filed into the classroom and gazed upon the battlefield from a heavenly perspective. [T]hey began to talk. They weren’t talking about pixels, polygons, baud-rates, Ethernet lines, or network architecture. They were talking exclusively about fields of fire, and fall-back positions, and radio traffic and indirect artillery strikes. They weren’t discussing “virtual reality” or anything akin to it. These soldiers were talking war.⁴¹

This “war” that the soldiers at the CATTC were engaging in, albeit “virtually,” and the *conduct* (i.e., military theory as a *concept* of operations) of which that they were discussing has a lineage that Gat summarizes well.

[T]he very idea that something called military theory existed – or rather was very much lacking – was the product of the intellectual gospel of the Enlightenment . . . [M]odern views on the nature of military theory originated from the most intensely philosophical period in European history. They were formed in response to the all-pervasive, epoch-making, and bitterly conflicting intellectual climates of the Enlightenment on the one hand, and the Counter-Enlightenment or Romanticism on the other.⁴²

Others, like Victor Hanson Davis – though he traces this lineage back to Ancient Greece – agree. Thus, it is asserted:

8 Introduction

the West has achieved military dominance in a variety of ways that transcend mere superiority in weapons . . . the Western *way of war* is so lethal precisely because . . . Western armies often fight with and *for a sense of legal freedom* . . . Because *free inquiry and rationalism are Western trademarks* . . . [which allowed] . . . over time . . . the resiliency of the Western system of war [to] prevail.⁴³

Further, Davis suggests:

Throughout the long evolution of Western warfare there has existed a more or less common core of practices that reappears generation after generation, sometimes piece-meal, at other times in a nearly holistic fashion, which explains why the history of warfare is so often the brutal history of Western victory – and why today deadly Western armies have little to fear from any force other than themselves.⁴⁴

It should, therefore, not be surprising that despite the progressive technologization (in this case, digitalization) of the conduct of war and the pre-occupation with uncertainty (i.e., the efforts to address the “friction” and “fog” of war by incorporating the complexity and non-linear sciences, chaos theory, etc., collectively the “new sciences”),⁴⁵ the so-called radical transformations in military affairs described by the visionaries of the NCW project also betray a strong fealty to an a priori organizing principle. This principle, in light of Gat’s and Davis’s observations, is suggestive of nothing less than a turn to Reason (*in extremis*, to a *universal mathesis*)⁴⁶ and, in this sense, it faithfully follows the lineage of martial thought since the Age of Enlightenment.

Even a cursory glance at a sample of the literature dealing with war, strategy, military theory, the RMA thesis, and the network-centric approach to war confirms this. It suggests that despite acknowledging the influence of ICTs on what we have traditionally understood as war, we remain beholden to a “human, all too human” understanding of war-as-such.⁴⁷ Thus, like much of the prevailing post-human discourse in which man has remained “at the center of its narratives [as] the one who becomes and the one who owns these becomings”⁴⁸ war, from at least the seventeenth century onwards, has essentially remained within a particular philosophico-political architectonic despite the recent turn (*kehre*)⁴⁹ to the non-human, that is to say, to the digital, the networked, and the information-led.

That significant changes and transformations have occurred and are continuing to occur, especially in the US military and warfighting capability, is incontestable. However, none of these apparently startling transformations are strictly new or even that revolutionary. To appreciate this, however, we will have to look back at the influence of the Enlightenment-inspired turn to Reason. Thus, for example, we could point to how Kant addressed the problem of Reason facing the challenge of its own legitimacy, particularly, in the form of Religion. Taking recourse to the argument of the antinomies and other such maneuvers, Kant’s critical attempt was to bring Religion to Reason. In this sense, Kant’s valiant effort was defensive,

which succeeded, but only in terms of keeping this antinomy of Reason at bay.⁵⁰ In the case of the NCW theorists, however, a viable argument is being increasingly made which suggests that Reason – organizing around ICT-based dependency-structures – addresses the question of its own genesis successfully, albeit technologically. For the NCW theorists, as we will see, Reason points to its empirical materiality in technological terms, that is to say, recursively.⁵¹ But there is a significant catch to this. What we find is that despite our growing understanding of war in techno-informatic terms, by keeping *bios* at the heart of our understanding, we have ensnared war – as a concept – with the help of *Thanatos*. In this, there is no difference between the conceptual substrates that underlie what may at first glance appear to be the radical – and often outlandish – theories and doctrines of NCW and the more historically-grounded analyses and assessments espoused by the more conservative (some would say sober) theorists of war.⁵²

Even in the Information Age, wherein there has been a movement to discuss war in purely technological terms which involves, among other things, the collapsing of *bios* and *technos* into and onto each other, the outcome of this exercise ends up being “politically naive, producing a completely reified grand narrative of technology as the true agent and *telos* of natural and (in)human history.”⁵³ The matter does not end there. As Ansell Pearson points out, “it also restricts *technics* to *anthropos*,” which brings us back to a techno-centric understanding of war that is only conceivable within an anthropocentric framework.⁵⁴

It is against this background that we will investigate – intuitively rather than empirically, conceptually rather than practically – the prospects of reimagining war. Our objective is singular: How can a renegotiation of the imagination of war be initiated, let alone fulfilled? Would not such project that attempts a re-thinking of the conceptual foundations of war lead us to the very edge of speculative theorizing – a seemingly abysmal exercise that throws us into that which Hallward, albeit in a different context, refers to as a space “out of this world?”

A failure of imagination: NCW’s Limit-Condition

For the NCW theorists, “response” is the key pivot around which the *concept of operations* that underpins the emerging theories and doctrines of NCW is organized. It is important to carefully note the precise meaning and implication of the “response” that is under consideration here. Strategically speaking, response, in the context of the NCW project, is the bringing-forth or revealing of the world as sensing. In this sense, sensing and response are co-constitutive of each other and of the world, where the world is – in originary terms – standing-reserve.

Now, Heidegger informs us that modern technology, among other things, “is a revealing,” but one which is more of a challenging or a setting-upon of nature to “supply energy which can be extracted and stored as such.”⁵⁵ This extraction and storage of “energy” is the *ge-stelling* of force – by exhausting its energy (its intensity) – thereby enabling its “extraction and storage.” The interesting thing to note is that what is extracted and stored, which Heidegger refers to as “standing-reserve,” is possible when change/nature is already subjected to calculative reason for it is

only then that change/nature can respond to such a challenge.⁵⁶ In Heidegger's terms, therefore, for modern technology to set-upon nature to supply energy, nature would itself have to stand-reserve and allow energy to be extracted from it. Thus, for the emerging theories of NCW the critical network is the one that enmeshes the three domains of the Cognitive, Informational, and Physical. This is the center of gravity of the NCW project and the means by which it attempts to, as Stiegler puts it, "constitute the *gestell* (frame) of nature and of humanity through calculation."⁵⁷ Given this, the criticality of sense and respond operations that form the bulwark of NCW theories is understandable. To Sense and Respond, within the NCW construct, therefore, is to bring (ing)-forth that what is standing-reserve. That which is brought-forth is force *sans force-intensity*. This is the force of the State-apparatus – be it a State or a war machine – and our commonplace understanding of war is an expression of this force.

Admittedly, this already marks a significant departure from how war and its conduct has been and, in most cases, continues to be thought of and engaged in. But the significance of this departure, particularly in the NCW context, is more often than not (mis)understood, primarily, in terms of its instrumental technicity. This has led to the perception that NCW may be an expression of how the technological is the "sensing-as-response" that delivers the promise of "calculative reason." In other words, for the NCW theories, sensing (understood as bringing-forth), as a response, serves not only as the event-horizon of "sensing-as-such" but also of "response-as-such." It is, therefore, not surprising to find that for the NCW theorists, the question of the manageability of bringing-forth – in the form of a response to sensing – is of critical importance. In this sense, the understanding of "technology" is not only instrumental but also managerial. This perspective gains credence when considered in light of de Landa's assertion that the central theme of modern warfare was and remains logistics and not strategy or tactics.⁵⁸ Interestingly, this does not mark a departure from how warfare since the Enlightenment has been understood – it is merely a technologically different mode of *being martial*. In this way, the net-centric warrior – like his predecessors – essentially remains a technological and manageable being.

Further, the co-incidental confluence of ICTs, bio-technologies, and war can be said to, albeit indirectly, reflect a map-less space which the NCW war machine is increasingly strategizing to code – Deleuze would say, to striate or to grid⁵⁹ – technologically. These are expressions of, or, more precisely, a response to a concern that, however faint, when considered in the context of the history of military thought, has always been in evidence – thus, for example, the Clausewitzian discussions on the fog and friction of war and Moltke's insistence on the fact that "no plan survives contact" are cases in point. In today's emerging informationalized battlespace, these concerns – these eruptions, interruptions, and interventions – and their management are assuming a very material and, in this sense, different expression.⁶⁰

In keeping with this, as the literature indicates, one finds the NCW project revolving around concepts such as Dominant Battlespace Knowledge (DBK), Shared Awareness (SA), and other such "collective consciousness" constructs in and of the battlespace.⁶¹ This is symptomatic of the fact that sensing-as-response, in

the context of the calculative framework of NCW's center of gravity, is predicated on and by an "enframing" (*Ge-stell*), which is limited/bound by the calculative framework of Reason within which sensing-as-response takes place. The key point to note is that the "challenging" that we referred to earlier takes place within this *Ge-stell* which is responded to and by that what is standing-reserve which, as we have seen, is force without intensity. In this sense, sensing-as-response is the eternally recurring production – bringing-forth – of the *Same*. As long as the center of gravity of the NCW project – as a war machine – is the *Ge-stell* where force bereft of intensity is standing-reserve, this works.

However, as Nietzsche informs us, force is

a monster of energy, without beginning, without end . . . increasing here and at the same time decreasing there . . . flowing and rushing together, eternally changing, eternally flooding back . . . most turbulent . . . most contradictory . . . a becoming that knows no satiety (for it has no desire), no disgust, no weariness. . . without goal . . . without will.⁶²

In the face of such energy, the *Ge-stell* of the NCW project, which presumes to exhaust force of its *intensity* is constantly disturbed, displaced, de-centered, shattered. In other words, we could say that the fog and friction of war that continually make their presence felt in the digital (but also the traditional) battlespace, are instances of eruptions, which are not simply miscalculations but aspects of *Disaster* . . . intimations of non-gridded or map-less space.⁶³ Critically, for the NCW project, Sense and Response in map-less or non-gridded space lose their traction and symmetry. They appear riddled with contradictions. Nietzsche's "monster of energy" that roils this grid-less space ensures that the causal link that normatively binds Sense and Response is continually undermined. This is the Limit-Condition of NCW.

Given this, it is possible, indeed productive, to read the NCW project as a self-organizing defensive gesture which seeks to secure its center of gravity – mapped or gridded space. As such, therefore, while the ethic of the NCW project is that of standing-reserve, its strategic object lies in the mapping or gridding of what Deleuze and Guattari refer to as "smooth space" by fabricating strategic ensembles, which are tasked with contending with the uncertain, the map-less, the grid-less and to bring them to Reason. Given this, we are compelled to ask: Does NCW strategize the last of what may have been unaccounted for in War-as-a-concept?

An outline of the book

It is necessary to emphasize that this study is neither an intellectual history of the evolution of the theories of war and combat culminating in the emerging theories of NCW nor is it a comprehensive account of the mode of combat commonly known as NCW. Worthy accounts that deal with such areas of interest already (over)populate the shelves of our libraries. Instead, this study is, in its essence, a critical engagement with the concept of "war" that in its traditional Clausewitzian sense

can be and, in some quarters, is being radically problematized by the dramatic developments in the dawn of the Information Age.

Given that what is at stake – at a fundamental level – is the re-imagining of war in conceptual terms, this book, therefore, is designed around three basic themes. First, it provides a historical, but also a philosophical, overview of “modern” war and military theory since the seventeenth century. The objective of this initial exercise is to reveal the force of “a properly conceptual geometry which might be called that of rationalism in general”⁶⁴ and which, in progressively lesser degrees of abstractness, takes the form of “the political” and the State thereby underpinning and thus presuming to exhaust the concept of war. Second, it describes the project of NCW with the aim to highlight that, despite its genesis from a space circumscribed by “the political,” what is philosophically interesting about it cannot be reduced to the specificity of the conduct of war – something that the more vociferous of NCW theorists and much of the policy-making community have either ignored or missed. Rather, the NCW project’s greatest conceptual and philosophical challenge is to intimate us of an “always-already” uninhibited and extravagant *intensiveness of war* that originally in-forms and is always in excess of the more commonplace Clausewitzian notion of war that we are familiar with. And third, it undertakes a discussion of this intensiveness of war which is, in Deleuze’s words, “a differential geometry which tends to ground solutions in the conditions of problems.”⁶⁵ It is critical to recognize that the ground of this differential geometry, which is “sufficient reason,” is “strangely bent: on the one hand it leans towards what it grounds, towards forms of representation; on the other hand, it plunges into groundlessness which resists all forms.”⁶⁶

When considered in this way, there may appear to be a close resonance between the *intensiveness of war* and that what Heidegger referred to as *polemos*. This requires a brief clarification. Fried shows us that

Heidegger’s preferred translation for the Greek word *polemos* is . . . commonly rendered in English as “confrontation” . . . [which] . . . is both a struggle [*kampf*] over and an account [thus a communication or *mitteilung*] of the sense of things, but not a naked attempt to impose meaning or dominion; confrontation expects and indeed demands resistance . . . This sense of confrontation . . . this confronting constitutes the fundamental condition of our existence, but not in the Darwinian sense of a struggle for existence as the survival of the fittest or in a Hobbesian sense of a war of all against all (although such things may subsist as aspects of *polemos*).⁶⁷

At first glance, the similarity between this Heideggerian understanding of *polemos* and the intensiveness of war that we have alluded to may seem strikingly obvious. Indeed, as Fried also points out, given the scope of Heidegger’s *polemos*, which is both broad and deep, for Heidegger, “*polemos* is a name of Being”⁶⁸ and in this sense, *polemos*, for Heidegger, is an ontological concept. Seen in this frame, yes, there is a similarity between Heidegger’s *polemos* – as interpreted by Fried – and the *intensiveness of war* to which we wish to draw attention to. However, the point

on which we part company with Heidegger is on the *nature* of the implicit confrontation (struggle [*kampf*] + communication [*mitteilung*]) that Heidegger's *polemos* entails. Contrary to Heidegger, we will argue for an understanding of war where the very notion of confrontation is obviated by the fluidity of the play of forces.

Even a sophisticated account of the polemical nature of Being, as offered by Heidegger, by positing confrontation or, more precisely, confront-*ing*, as being constitutive of the fundamental condition of existence, ultimately relies on an external distinguishing between sides from one another by the taking up of confronting positions in everything from respectful, vigorous debate to trench warfare.⁶⁹ The question that must be posed to Heidegger here is whether this confront-*ing* is solely in terms of Being or also of Dasein. If we go by Fried's reading, Heidegger's *polemos* "describes not only our own Being, what he calls Dasein, but also of Being itself."⁷⁰ But repeatedly we find that the access to Being as *polemos* is mediated by the polemical nature of Dasein, which detracts from the non-human aspect of Heidegger's *polemos* and returns it to an anthropic plane. In this way, Being is always being thrown-in-the-world. But this also means that Heidegger's *polemos* is also tainted by *anthropos* – even if this tainting is inestimable. Thus, at the least, and as a direct cause of this tainting, *polemos* is polemical, but anthropically.

Given this, it is suggested that the project to re-imagine war is better approached in non-human, that is to say, in *machinic* terms.⁷¹ Among other things, this involves a de-attachment from Heidegger's Dasein and the abandoning of the anthropic plane. It will also involve us in movements that are immanently nomadic that break down walls – from the flimsiest (as constructed by the most loosely arranged of assemblages) to the most chalky and rigidly rock-like ones (as presented by the most densely packed apparatuses and structures) – by re-arranging them. Thus, war, considered *intensively*, is not simply *polemos* – it is, in an even more originary sense, in excess of *polemos*.

We should also consider ourselves forewarned that indulging in such an exercise, following a Nietzschean refrain, is "dangerous." This is because not only would we be creating and appropriating concepts and their associated vocabulary, but also because, to do so, we would have to become *purely tactical*, that is to say, let ourselves loose into a condition of "pure becoming." As a consequence, the links between this emergent understanding of ourselves and the traditional understanding of the Human would become more tenuous and distant. Under these conditions, it will be appreciated, the commonplace Clausewitzian understanding of war, which is subordinated to "the political" and which, in this sense, is dependent on a particular understanding of "the human," undergoes a change.⁷² The mode of operability applicable within such conditions – that which we previously referred to as being purely tactical – is best described in terms of a wandering that takes "the here-ness and nowness of place (and time) with it as unstill reference point[s]."⁷³ It is under these conditions that the theories and doctrines of NCW – the technical, instrumental, manageable, and thus strategic mode of *being-martial*, which represent our most recent imagination of war – as a strategic ensemble, de-construct.

For our purposes, therefore, to gain an insight into the *intensiveness* of war it will be necessary to experiment with what may appear to be a counter-intuitive mode of operability – one that is best described as Sense and Evolve (SAE).⁷⁴ One way to approach SAE – as a mode of operability – is in terms of an originary technicity, but one which is bereft of any anthropic hues,⁷⁵ and which is “impartible, yet It exists as if divided in beings: It is known as sustaining beings; and devouring, as well as generating [them].”⁷⁶ Such an operational mode is marked by “seeing in-action in action and action in in-action”⁷⁷ where “undertakings are all devoid of plan and desire for results . . . without effort, unaffected by the pairs of opposites, even-minded in success and failure, though acting . . . not bound,”⁷⁸ where “there is no waste . . . nor is there production of contrary results,”⁷⁹ and where the “intellect crosses beyond the taint of illusion . . . regarding things heard and things yet to be heard . . . in-difference.”⁸⁰ This is nothing less than a *becoming* – an ebb and flood of force – always de-composing strategic ensembles and structures (such as the Human, the State, or the MIME complex) – an *in-difference* that makes a mockery of the instrumentality and the managerial functionality that is the hallmark of not simply the NCW project, but also of the Clausewitzian understanding of war. This is a *becoming* that the *intensiveness* of war entails. SAE operations, thus, are operable modes in which the theory of material, formal, final, and efficient causes is subverted and, as such, are expressions of *pure tacticities*, that is to say, *pure becomings* which, while being independent of the forms and substances, expressions and contents that *becomes*, nevertheless, co-responds to and with them thereby breaking up strategic ensembles into more local and transient tactical initiatives.

Given this, it may be more productive to approach this study as an extended experiment that seeks to interrogate the singularly “thanato-political” premise of the prevailing mainstream philosophies and doctrines of war and its conduct, which continue to subtly, but unmistakably, inform the theory and doctrines of NCW. This exercise should not be misunderstood as being a case of propounding an alternate theory of war. Rather, it is one response to the emergent conditions that have resulted as war and its conduct find their expression in the Information Age. In keeping with the turbulent conditions that are, in many ways, the focus of this study, this experiment, therefore, will necessarily be a poly-vocal one that is disruptive and subversive to the dominant philosophies and doctrines of war and its conduct (and, by implication, to the underlying anthropic principle on which they are grounded).

Thus, to give a brief overview of the content of this study, Chapter 1 provides a historico-philosophical summary of modern military thought with the ulterior objective of highlighting the emergence of what I, in the following chapter, refer to as the “architectonic of war.” This, it is suggested, is the framework – conceptual and material – within which we commonly understand war and engage in it. To this end, our investigations will lead us to closely consider the operative concept of war both from a juridical-politico point of view and from the point of view of the evolution of military theory, which form the backdrop against which Clausewitz would later expound his theory of war. Herein we will see how the ultra-rationalistic

accounts of war and military theory of the late seventeenth and early eighteenth centuries began to morph into ones that reflected a growing appreciation of the disruptions caused by chance and uncertainty on the battlefield and how this, in turn, influenced the theorization of war and its conduct. This chapter closes with a brief analysis of the Jominian “art of war,” which sets the stage for a detailed and critical engagement with the Clausewitzian theory of war in the chapter that follows it.

By carefully examining pertinent sections of Clausewitz’s *magnum opus*, Chapter 2 identifies how the principal Clausewitzian objective of constructing an architectonic of war was achieved. It investigates in some detail the key reasons as to how and why the Clausewitzian theory of war has proved to be durable to the point that it continues to exist as the kernel of the emerging theories of NCW. The objective of this chapter is two-fold. First, it seeks to establish the pioneering theoretical, indeed philosophical, effort of Clausewitz by identifying and isolating the fundamental philosophical problem that he had to contend with during his theoretical exercise. Second, it seeks to highlight how this philosophical problem – which lies embedded within Clausewitz’s theory – may be considered as a signature of the *intensiveness* of war, which Clausewitz, in his own way, did his best to keep at bay.

Chapter 3 maps out a genealogical account of the theories and doctrines of NCW. The objective of this chapter is to highlight the primarily technicist account that emerges out of the most common renditions of this emerging form of warfare which, in itself, is a commentary on the operative concept and imagination of war that is at work in the NCW paradigm. Further it highlights how – despite the claims that are made on behalf of NCW as being a “new way of war” – NCW (as a *concept* of operations), at least in the way that it is currently being operationalized is, in essence, organized around a patently Clausewitzian philosophical premise. In this chapter, we will also look at the strategic imperatives of the NCW *concept* and of its implications in light of the operationalization of the theories and doctrines of NCW.

Chapter 4, by co-relating past developments in (traditional) military theory with the emerging theorizations on and of NCW, investigates how the problem posed by *Thanatos* is contained within a patently martial flavour of a *universal mathesis*. Among other things, this will enable us to critically assess the mesh of nets that NCW, as a *concept*, seeks to cast thereby “constituting the *gestell* (frame) of nature and of humanity through calculation.” The key objective of this chapter is to highlight how the State-sponsored NCW project – unlike in the case of the Clausewitzian theory of war which, while intuiting the *intensiveness* of war, attempted to keep it at bay by means of a variety of ways – proactively and ceaselessly “desires” to capture the *intensiveness* of war but only to instrumentalize it. As we will see, this project is doomed to failure for the “monstrous energy” that characterizes the *intensiveness* of war undermines not only the structural integrity of the theories and doctrines of NCW; it also subverts the dominant and prevailing concept of war itself.

In Chapter 5, we will establish the premise from which the re-imagination of war – as a concept – may take place. With the caveat that this is primarily a

speculative enterprise that makes no pretention of being a “theory of war,” we will not only co-opt some of the conceptual tools offered by Deleuze and Guattari and re-read some of the principal concepts underwriting the NCW theories and doctrines, we will also invoke an ancient Indian text – the *Bhagavad-Gita* – within which, we contend, there is operative a radically different imagination of war. Additionally, we will have occasion to interrogate the Deleuze-Guattarian thesis concerning war machines and the war that they claim “comes from elsewhere.” Finally, we will take the first tentative steps by means of a set of exploratory and speculative propositions – to sketch out one possible way to theorize the *intensiveness* of war.

In the Conclusion we will return to the question of war-as-such and will underscore how the re-imagination of war – in terms of its *intensiveness* – helps open up the concept of war to further modes of problematization.

1 Prelude to Clausewitz

The etymological roots of the word “war” – said to have evolved from the late Old English (c. 1050) words *wyrre* and *were*; from the Frankish word **werra*; from the Proto-Germanic word, **werso* (cf. O.S. *werran*, O.H.G. *werran*, Ger. *Verwirren*) – convey a sense of confusion, strife, discord, struggle, and violence. It is important to recognize this because, when considered in its modern sense, the word “war” appears to perform both a descriptive function and a conceptual one. Thus, the question arises: How, when, and for what reasons did a phenomenon – marked by violence, strife, discord, belligerence, and defiance – become a concept?

As we will see, the modern concept of war emerged in the late seventeenth century and was marked by a very specific set of philosophico-historical conditions that emerged with the decline of the Age of Religion. From this point onwards, among other things, war, as a concept, became inextricably associated – in a primarily subservient role – with the State. Thus, what follows is an account of how the phenomenon of war – characterized by confusion, strife, discord, struggle and, violence – gradually came to be circumscribed within the purview of Reason thereby allowing for it to be, in the first instance, rationalized, controlled, and regulated. Further, as our review of the more prominent military theories of the Age of Reason will show, this rationalization, control, and regulation of war was equally reflected on the battlefield. In the process, we will see how the jurists, political theorists, and military theorists of the time strove – with varying degrees of intensity – to rationalize the conduct of war – both juridico-politically and operationally. Taken together, this analysis will highlight how the project to “bring war to Reason” evolved. At the same time, this account will also gesture, albeit subtly, to the hidden tensions that wracked this project, as it struggled to contain what we have previously referred to the *intensiveness* of war within the circumscription of Reason.

A historico-philosophical background

“No medieval thinker, no matter how adventurous, could have undertaken Kant’s construction of a religion within the limits of reason alone – he could have hardly imagined it.”¹ But this should not suggest that medieval philosophers were any less partial to Reason. As Gay points out, “there were many subjects, especially in logic

and ontology, which (the medieval) philosophers treated philosophically – that is by the sole right of reason.”² What distinguished them, however, from their Enlightenment successors was their conviction that, as Gay puts it, “nothing but the divine could penetrate everywhere.”³ For those who dared to deny the absolute transcendence of the Divine, Dante’s *Inferno* – particularly the sixth circle of hell – awaited them. Thus, not many could keep the divine in abeyance for too long. Indeed, as Gay suggests, “Dante’s journey from the *Convivio* to the *Divine Comedy* mirrors the retreat from critical thinking . . .”⁴ that marked the Age of Religion. This hierarchy of values – this subordination of Reason to the Divine – was inconceivable to the Enlightenment philosophers for, as Gay highlights, “philosophy (for the Age of Enlightenment) was autonomous and omnipotent, or it was nothing.”⁵

The Age of Enlightenment was thus characterized by “a decline in mysticism, of growing hope for life and trust in effort, in commitment to inquiry and criticism, of interest in social reform, of increased secularism, and a growing willingness to take risks.”⁶ This marked the clear ambition of the Age of Enlightenment: an ambition which, in Descartes’ words, was nothing less than to make men the “masters and possessors of Nature.”⁷ Thus, while for the medieval philosophers the limit-horizon of Reason was the Divine, for the philosophers of the Enlightenment, Reason itself was the “tribunal before which all disputes, all differences, were to be resolved”⁸

Gay suggests that:

the Enlightenment was not [necessarily] an Age of Reason but a Revolt against Rationalism . . . [and that the Enlightenment’s claim] . . . was in no way a claim for the omnipotence of reason . . . [contrarily, it was] . . . a political demand for the right to question everything, rather than the assertion that all could be known or mastered by rationality.⁹

But there are other analyses which contend that while there is some evidence to support Gay’s assessment, it nevertheless “fails to recognize that the talk of ‘omni-competence of criticism’ is itself a manifestation of the ‘omnipotence of reason’, at least in its analytic function.”¹⁰ The Cartesian methodology – premised on the Cartesian understanding of the Self – which was essentially schematic in nature in so far as it enabled the creation, maintenance and expansion of a tabular form of representation – a *universal mathesis* – is a case in point.

The key element that empowered the rationalistic Cartesian methodology was the Cartesian conception of the Self and the implicit, but radical, reflexivity that was operative within it. This reflexivity was based on a dualism which was very distinct from the dualism proposed by Plato.¹¹ It worked by taking a disenchanted/a-enchanted or “objective” view of the body by affirming the immaterial nature of the soul.¹² Thus, as Taylor puts it, by repudiating a Cosmic order of things, as Plato had done, which enabled the realization that an individual’s “true nature was a supersensible soul . . . [by turning to] . . . supersensible, eternal, immutable things . . . [thus] seeing and understanding the things which surround [the individual] as

participating in the Ideas which give them being,"¹³ the Cartesian conception began from the premise that there was no pre-ordained a priori "order of Ideas" and maintained that "understanding physical reality in terms of such is precisely the . . . confusion between the soul and the material."¹⁴ Postulating in this way the separateness of the body from the soul enabled Descartes to provide a radically new and different understanding of Reason and its hegemony over (bodily) passions.¹⁵ This understanding of Reason—premised on a specific understanding of the Self—which enabled seeing the world from a disenchanted point of view, in turn, allowed for an understanding of the world as a domain of potential instrumental control.¹⁶ It is at this point that Reason also began to be understood procedurally and in terms of the standards by which the orders of science and life were constructed.¹⁷ Taylor makes the point well when he says:

[F]or Plato, to be rational we have to be right about the order of things. For Descartes rationality means thinking according to certain canons. The judgment now turns on properties of the activity of thinking rather than on substantive beliefs which emerge from it.¹⁸

By the eighteenth century, however, there was another transformation underway and this involved extending the concept of truth and philosophy and "[t]he attempt to solve the central problem of [the] philosophic method" which, according to Cassirer, "[involved] recourse to Newton's 'Rules of Philosophizing'"¹⁹ Contra the Cartesian method of beginning with a set of principles, the Newtonian method relied heavily on, what Cassirer calls, "the data of experience."²⁰ Then, by following the method of rigorous analysis, a set of principles was arrived at whose applicability was deemed universal. It is curious to note that while Cassirer marks the difference in orientation between the Cartesian and the Newtonian models of methodology, he also points to the commonality of the goals and basic presuppositions of the Cartesian and Newtonian methods, namely, the presence of universal order and law in the world. This universality of order—both as a premise and as the goal of the Cartesian and Newtonian systems—also implied that facts were not merely a "jumble of discrete elements," contrarily, they exhibited an all pervasive form.²¹ Thus, between the Cartesian and the Newtonian systems, the core difference was one of methodology, though the aim remained the same. While the Cartesian system took as its premise a universal order and proceeded to reinforce that premise by the methods of rigorous induction, the Newtonian system began by examining phenomena and then proceeded to establish the general principles which, like the a priori stance of the Cartesian method, also resulted in the affirmation of a universal order.²² This methodological shift was critical in the sense that it based the notion of a universal order within a framework which, while being critical of the implied dogmatism of the Cartesian system and sharply distinguishing between the Cartesian "love of the system" from the Newtonian "value of the system," nevertheless served, perhaps unwittingly, to treat thinking in terms of a system as a dogma itself.²³ In effect, therefore,

[t]he advance of knowledge . . . meant the advance of reason. In the course of the eighteenth century, the world . . . was being emptied of mystery. Pseudo science was giving way to science, credence in the miraculous intervention of divine forces was being corroded by the acid of skepticism and overpowered by scientific cosmology. The sacred was being hollowed out from within by the drying up of religious fervor, the call for good sense, the retreat from Augustinian theology . . . and the advance of rationalism.²⁴

As a result, increasingly, emphasis began to be laid on the “agenticity” of the human in moral conduct, economic activity, and politics and from this to draw conclusions about human nature.²⁵ This paralleled “the shift towards a representation of the soul and its activities in terms structured by thought about the material world and sometimes even in material terms.”²⁶ This was quite explicitly evident in the juridical domain.

Roger Smith suggests that there were two general approaches to the question of “laws.” The first held law to be intrinsic to the divine order of things, while the second held that it was a human construction. In the sixth century, the Byzantine Emperor Justinian drew up what is considered to be the greatest contribution of Rome to western civilization – Roman Law – embodied in the *Digest* and the *Institutes*, which he decreed were not to be commented on. Yet, according to Smith, medieval scholars proceeded to do just that. By the sixteenth century, “the techniques and ethos of humanist scholarship created a vast amount of jurisprudence to accompany these inherited laws.”²⁷ Simultaneously, the tradition of English Common Law (i.e., custom) not only affected this development of jurisprudence, it also influenced the question of whether or not jurisprudence should be understood in terms of a rational discipline. By the seventeenth century, however, the emerging categories of the person, of things, and of actions, brought about a profound transformation within the theory and practice of medieval jurisprudence. It is in this way that the concept of the human-individual (that is, an agent with a body, property, and free will) assumed a position of central importance. This assemblage of body, property, and free will – the human-individual – in turn, found its equivalent in the notion of the State, which was considered to also possess a body, property, and free will. This resulted in the great debates that began from the seventeenth century which had, as their central feature, the question of the identity of that which formed the “body politic” (consisting of three poles – the monarch, the prince, and the representation of people). This is how the search for “causes in jurisprudence and natural philosophy led to . . . [the] attempts to rationally understand history and nature and empirically to discover historical and physical agencies.”²⁸

Though not strictly falling within the time frame commonly ascribed to the Enlightenment, for our purposes, Hugo Grotius remains an influential jurist and scholar, especially when investigating questions pertaining to war.²⁹ The chaotic and savage Thirty Years’ War provided the background against which Grotius wrote his *The Rights of War and Peace* (1625). Grotius considered the effects of the Thirty Years’ War – civil anarchy, military stalemates, and the potential for widespread unending wars – as being damaging and sought to establish some common

grounds on which humanity could agree upon. Deeply influenced by Galileo's geometry (as Descartes was), Grotius reacted against the political uncertainty of his times and affirmed the ideal of moral philosophy as being logical, consistent, and systematic. His bid to create the common ground of humanity began with his attempt to give an account of human nature. Grotius posited that regardless of all else that may divide Man, there was one common link that linked all of humanity – the principle of self-preservation.³⁰ This common link, Grotius suggested, was highlighted by the fact that Man could not, if acting within Reason, violate. In other words, Man could not imperil his own self. Certainly there could be actions undertaken that would or could undermine self-preservation, however, they would be, according to Grotius, irrational acts.³¹ This allowed Grotius to further suggest that the common link of humanity was not simply self-preservation, but self-preservation informed by Reason, which he glossed by asserting that "[I]ove, whose primary force and action are directed to self-interest, is the first principle of the whole natural order."³² This, for Grotius, was the universal human reality. It is important to note that knowledge of this reality was the cornerstone of conduct, not only of Man but also of States.³³

Further, Grotius, using the argument of self-preservation (informed by Reason) being the universal human reality, was able to suggest that the individual had the right to pursue his/her self-interest provided it did not impinge on the self-interest of others. In this manner, he was able to turn the theory of natural law from its medieval focus on duty, which was based on a conception of the divine construct of nature (including Man) to one of rights.³⁴ By stating this, Grotius was also making a significant comment on a particular attribute of Man – his inherent sociability. Taken together, Grotius' observations set the agenda for the just war concept, which would play a critical role in defining the modern concept of war. Post Grotius, therefore, war came to be increasingly understood as the means by which self-interest was served and the self was preserved. The significant caveat, however, which served to check the wanton-ness of war, as witnessed by Grotius himself, was the underlying presence of Reason, which would inform self-interest and self-preservation.

This sentiment was also echoed by the Swiss diplomat and lawyer, Vattel, the author of *The Law of Nations* (1758), who "offered a guide to two critical questions: (1) Are there legitimate causes for war and (2) Could war be regulated by rules or laws that limit the severity of impact on humanity?"³⁵ Vattel concluded that lawful war was distinguished by certain easily identifiable objectives – recovery of belongings, exacting dues, providing security, and self-defense. The stark continuation between the theoretical efforts of Vattel with those of Grotius and, as we shall see shortly, of Hobbes is manifested by his identification of the principle of self-defense as a natural law. Thus, Vattel claimed,

We have shown that nature gives men a right to employ force, when it is necessary for their defense, and for the preservation of their right. This principle is generally acknowledged: reason demonstrates this; and nature herself has engraved it on the heart of man.³⁶

Aside from reaffirming the intrinsic Reason-centric nature of man, Vattel's theorizations were also instrumental in defining the standards which would govern war. More importantly, Vattel held the view that the "object" of war was to do whatever is necessary to bring (Vattel uses the word "reduce") an opponent to "reason."³⁷ This is of particular interest to us because, with this statement, Vattel implied that the participants of a war were bound to be subject to Reason and when that subservient relationship was broken, it presented a condition wherein the party that broke out of the bounds of Reason could be subjected, by acts of force, to return to the fold of Reason. Thus, what, in effect, Vattel was pointing to was that Reason provided the overarching fold within which "security" was not only possible but also guaranteed.

Grotius' formulation of self-preservation informed by Reason also had its parallel in Hobbes' attempt to find a rationale for an ordered civil society. However, Hobbes' conclusions were very different and they, in no small part, contributed to the "modern" understanding of war. Being heavily influenced by Descartes (and Gassendi), Hobbes held that "Science is the knowledge of Consequences, and dependence of one fact upon another: by which, out of that we can presently do, we know how to do something else when we will, or the like, another time."³⁸ Further, he shared, with Descartes and Gassendi, the view that nature is made up of small particles of matter in motion. Given his views on science and the corporeality of nature, Hobbes was then able to posit that human actions, particularly those pertaining to self-preservation, could be explained in the same manner as the motions of physical particles. Further, his explanation for the actions of Man as being synonymous with the movement of particles allowed him to provide a ready explanation for the violence that was visible in common human interactions. He suggested that it was the natural and unbridled drive of individual self-preservation that led every Man to strive to establish power over others. This inevitably would lead to a conflict-ridden scenario, which reflected the political condition within which Hobbes found himself. Understanding human acts in terms of pain and pleasure, Hobbes suggested, would only serve to explicate the supposed mysteries of human action. Thus, instead of appealing to any transcendental reasons, Hobbes simply suggested that since human acts were guided by the sensations of pain and pleasure, these sensations also provided the adequate provocation to either engage or to not engage in acts.³⁹ Working from this premise, Hobbes was thus able to postulate that "were the nature of human actions as distinctly known as the nature of quality in geometrical figures . . . mankind should enjoy . . . an immortal peace."⁴⁰ But how was this "immortal peace" to be achieved?

Hobbes exhorted his readers to engage in observing and comparing what we observe in others with what we observe in ourselves. This would lead us, Hobbes theorized, to recognize the instrumentality of Reason in governing the passions which, if unchecked by the rule of Reason, would lead to a condition of conflict. Recalling in this context Hobbes' conception of Man as a particle propelled by nature to seek self-interest (which necessarily includes self-preservation), we find that the Hobbesian formulation of sociability was not the same as the Grotian construct. For Hobbes, sociability was not a natural condition – it was an artificial

construct which depended wholly on the observation of how contradictory self-interests of individuals held the potential to negate their core self-preservative tendency which, to Hobbes, was the “natural condition.” Hobbes described this condition in dramatic terms. According to Hobbes:

It is manifest, that during the time men live without a common power to keep them all in awe, they are in that condition which is called war; and such a war, as is of every man, against every man.⁴¹

To escape this condition of war, Hobbes posited a “general rule of reason,” by which, “every man ought to endeavor peace, as far as he has hope of obtaining it.”⁴² Hobbes’ corollary to this was that if a man is unable to achieve peace, then he should defend himself by all means. To Hobbes, this was the fundamental rule of nature. However, he was astute enough to derive a further law which stated that

A man be willing to, when others are so too, as far-forth, as for peace and defence of himself he shall think it necessary, to lay down this right to all things; and be contented with so much liberty against other men, as he would allow other men against himself.⁴³

This may be considered as being an originary point for the Hobbesian notion of “the contract.” But the culmination of the Hobbesian project was in his formulation of the *Leviathan*, which was that “common power to keep . . . all in awe.” It is not surprising that the Hobbesian *Leviathan* worked from a number of common premises of the seventeenth century. The first was the mechanistic conception of the *Leviathan* described by Hobbes in the language of mechanical things. The second was the consideration of the *Leviathan* as a body-politic. And, the third was the underlying role of Reason – both for constructing the civil Man and the *Leviathan*. In this way, as Roger Smith points out, Hobbes made “the link between mechanical technology and political technology”⁴⁴ thus paving the way for the development of the mechanistic and materialistic categories for a new science of Man.

The theories of Grotius, Vattel and Hobbes, mentioned here solely as illustrative examples, thus served two purposes. First, they reduced the phenomenon of war to a function that found its meaning within the context of the body-politic and second, they reinforced, the possibility of war to be understood, if not strictly in mechanical terms, at least in rational terms. In this way, the emergence of a specific concept of war began to take shape.

Classical military theory – an evolutionary overview

The reconfiguration of the Real by Reason, which was underwritten by a growing understanding of a rational Self, afforded the military intellectuals and theorists of the Age of Enlightenment the opportunity to introduce mathematical precision and certainty to the study of war. Yet, the influences of the neo-classicism of the arts of the seventeenth century retained some of their potency. Thus, for example, Folard,

identified three themes which characterized the development of military thinking in the Age of Enlightenment. First, an admiration and attention to Classical Greek and Roman military practice, which served as ready and exemplary military models during the Enlightenment. This was also indicative of the emphasis placed on the methodology of historical observation and the dispelling of any concerns about the notion of historical change. Second, the consideration of war as a science and the attempt to identify rational and universal principles governing the conduct of war, and third, the recognition of the “military spirit” or what might be considered the psychological foundations of war.⁴⁵ Thus, while the tendency to cast the study of war into a set of definitive and universal principles grew stronger, there was also a tacit recognition that a part of the conduct of war (that is, the methodology of war) would remain outside the efforts of formalization. These variables, which remained outside the efforts of formalization, were entrusted to the care of the Commander who would be the primary instrument to apply the formalized principles of war to specific situations. Yet, despite the recognition of the critical role of the commander in the context of war, the attention of the military theorists of the Enlightenment remained focused on developing and articulating a very definite system of war. This is best illustrated in the words of de Saxe:

Before enlarging too much upon the elevated [*elevees*] parts of war, it will be necessary to treat of the lesser, by which I mean the principles [*principes*] of the art . . . As in architecture for example, the knowledge of the fundamental principles is a prerequisite to the operation of genius.⁴⁶

De Saxe’s work, *Reveries on the Art of War* (1756), despite being dismissed by himself as being “irregular and inelegant” (which may be attributed to that period’s customary literary gesture), and by Jomini (whom we shall consider at some length later) as being a failure because it was, according to Jomini, not universal and definitive, was nevertheless a comprehensive treatise on war. In it, de Saxe, advanced a number of original ideas but the most valuable contribution that he made was to subject “military affairs to reasoned criticism and intellectual treatment, and the ensuing military doctrines were perceived as forming a definitive system.”⁴⁷

But even preceding de Saxe’s work, in the *Art of War by Principles and Rules* (1748), Marquis de Puysegur had already attempted to formulate a “universal theory of war . . . derived from historical observation.”⁴⁸ Dismissing the claims that historical change influenced the conduct of war, Puysegur contended that far from being irrelevant, warfare during the times of antiquity was more than relevant for his age and times. Decrying the call that warfare of his age was a new form of war, he suggested that

despite all the changes in armament, the science and art of war remained the same at all times. Betraying quite explicitly neo-classical influences, Puysegur emphasized that the successes of all the great generals throughout history had been the result of adherence to the universal rules of war.⁴⁹

In addition to the method of historical observation engaged in by Puysegur which, we should note, follows from the original Cartesian–Newtonian construction of Reality by the methodology of observation informed by Reason, Puysegur also gave expression to a more immediate ideal of the Enlightenment – *esprit geometrique* (the spirit of geometry).

Picking up on the celebrated works of Vauban, Puysegur, focused on siege warfare. In the late seventeenth and eighteenth centuries “sieges were far more frequent than pitched battles . . . They were the focal operations of a campaign.”⁵⁰ Vauban’s work was developed in this context and he “perfected the geometrical system of fortifications and also developed a highly effective method of attacking fortresses. This was a systematic and uniform procedure that achieved an almost certain breakthrough with little bloodshed.”⁵¹ Puysegur reasoned that if siegecraft could be made universal and scientific (more precisely, geometrical), as Vauban had done, the same could also be done for field warfare. This would imply emphasizing on the application of the disciplines of geometry and geography to war. Given that armies operated in space, and that geography provided the concrete knowledge of that space, geometry, it was reasoned, provided the precise instruments for analyzing and regulating movements of the armies within it.

The performance of the Prussian Army in the Seven Years War and the generalship of Frederick the Great was to direct a great deal of attention to its organization and doctrines. While the generalship of Frederick the Great was attributed to his genius, which could not possibly be studied, the operational art of the Prussians was given a very close scrutiny. In the attempt to better understand the perfection achieved by the Prussians in “mechanically . . . firing and maneuvering of linear formation[s] operating in close order,”⁵² leading French Enlightenment thinkers began to reexamine the lessons from antiquity. Maizeroy maintained that

[T]hough the invention of powder and of new arms have occasioned various changes in the mechanism of war, we are not to believe that it has had any great influence on the fundamental part of that science, nor on the great maneuvers. The art of directing the great operations is still the same.⁵³

While this reinforced the essential methodology of Puysegur – of looking back into antiquity for the universal principles of war – Maizeroy was also instrumental in giving a fresh impetus to “tactics” which, in the context of the Enlightenment, was understood as a system of army organization and battle formation. It is necessary to clarify that while the military thinkers of the Enlightenment “tended to look upon the conduct of armies on the battlefield predominantly as a product of their battle formation and related doctrines, tactics also implied the conduct of battle itself.”⁵⁴ By relying on a close analysis of historical data and explicitly referring to the Pythagorean philosophy, which held that numbers underlay all phenomena, Maizeroy maintained that military formations had to be based on the correct choice of the universal numbers that insured flexible internal division and maneuver⁵⁵ thus reiterating, albeit in a fresh sense, the *universal mathesis* that was thought to

have underwritten not only the “art” of war (in terms of military theory), but also, implicitly, the phenomenon of war.

Additionally, Maizeroy, influenced by his studies of Emperor Maurice and his military treatise, the *Strategicon*, used the word “strategy” (which he derived from the Greek word *strategos*) with specific reference to the operational conduct of war. It is important to note that while Maizeroy may be credited with the first modern usage of the term “strategy,” it was von Bulow, who “divided the conduct of operations between strategy and tactics in the sense which is known today.”⁵⁶ Maizeroy held the view that while tactics – concerned with “the respective position of men who make up a troop in relation to that of the different troops that make up an army, their movements and their actions, their relations with one another”⁵⁷ – could be reduced to a firm set of rules and principles, strategy, which was the operational conduct of war, demanded the employment of what he termed “the most sublime faculty of mind . . . reason” since it depended on physical, moral, and political circumstances.⁵⁸ While Maizeroy attributed to these circumstances the fluidity of change, which he considered wholly within the domain of what he called the Genius, he nevertheless extracted and presented some “rules of strategy” which bear a remarkable congruence to what is today commonly understood as “the principles of war.”⁵⁹ Despite the inklings of the role of the Genius in war and the consideration of operations of war in terms of strategy, the focus of military thinkers of the Enlightenment, however, remained fully on tactics and the firm principles which would provide a definitive system of conducting war.

***Akehr* to the non-human**

The greatest impact during this stage of the development of the sciences of the military, however, was felt with the publication of *A General Essay on Tactics* in 1772. Written by a young nobleman, Guibert, the book trumpeted two basic themes. The first was the demand of a citizen army and the second was the call for a war of maneuver.⁶⁰ Guibert, breaking away from the precedent set by Maizeroy, bound the two thematic elements of his book under the single label, *tactique*. As we have seen, the word “tactics,” in a general sense, involved the maneuvering of troops and at that time included within its ambit both what Maizeroy had identified as strategy under the label of “grand tactics,” and the unit level movements, which we today understand as tactics.⁶¹ Guibert, however, rejected this practice. To him, “tactics” was virtually all of military science and was composed of two elements. The first was the raising and training of armies and the second was the art of generalship. Guibert’s ambition, thus, was nothing less than to raise “tactics” to “the science of all times, all places and of all arms.”⁶² Tactics was thus to be elevated, in Guibert’s scheme of things, to the position of a universal truth. Guibert’s influence and contribution to the development of military thought is based on the two themes that he forcefully argues in his work and we shall consider both at some length.

At the outset, it is worth pointing out that Guibert’s call for a citizen army was, in its essence, not a radically new one. The lineage of the call that “military forces . . . must be composed by the inhabitants of the state that the army is expected to

defend”⁶³ can be found in the writings of Machiavelli. This call also highlighted the “close connection and interrelationship between political and military institutions,” which forms the critical thesis of Machiavelli.⁶⁴ This Machiavellian observation, whose traces can also be found in the works of Montesquieu, Rousseau, and Mably, among others, was a familiar doctrine of the Enlightenment.

Guibert began his call for a re-evaluation of the military system prevalent in France by drawing attention to, like many others of his age, the “ideal, simple, and vigorous republics of antiquity.”⁶⁵ Then, echoing Montesquieu’s assertion regarding the connection and inter-relation between all aspects of the socio-political fabric, Guibert suggested that:

Politics is naturally divided into two parts, interior and exterior politics. The first is the basis of the second. All of which belongs to the happiness and the strength of a people springs from their sources, laws, manners, customs, prejudice, national spirit, justice, police, population, agriculture, trade, revenues of the nation, expenses of the government, duties [and] application of their produce.⁶⁶

The result of this analysis of politics led Guibert to suggest that “a comprehensive scientific study of the politico-military sphere must . . . analyze all these factors in depth.”⁶⁷ This he proceeded to do by looking back into history. Guibert’s investigations revealed to him that the great captains of antiquity left behind no universal principles of war, a situation which he found disturbing for it highlighted, what he called, the “fundamental error” in the science of war. This led him to observe that:

[A]most all sciences have certain or fixed elements, which succeeding ages have only extended and developed, but the tactics, till now wavering and uncertain, confined to time, arms, customs, all the physical and moral qualities of a people, have of course been obliged to vary without end and for a space of a century to leave behind nothing else than principles disavowed and unpracticed, which have ever been cancelled and destroyed by the following age.⁶⁸

To avoid this situation from recurring and in keeping with the dominating view of a universal condition inspired by the scientific ideals, Guibert, once and for all, wanted to base military science on the methods of Newton, Leibniz, and D’Alembert.⁶⁹ Further, he insisted that an incorrect methodology was responsible for the chaotic state of affairs that he claimed to have discerned in the field of military science. His observations, in this context, are worth noting:

Let us suppose that the first mathematical truths are taught to a people inhabiting the two extremes of the globe . . . they must evidently in time arrive at the same result of principles. But has there been in the tactics any clear cut truth demonstrated? Are the fundamental principles of this science established? Has one age ever agreed on this point with its preceding one? But why was there no such work, which could have laid a firm foundation for its principles? It is for

this reason that the military have for a long time been ignorant how to analyze the subject . . . and unacquainted with the method of explaining and arranging their ideas.⁷⁰

It was on this premise that Guibert offered his *A General Essay on Tactics* which would lay down the definitive principles that guided war and its conduct, which he deemed would have universal applicability. Thus, for Guibert, “tactics . . . would constitute a science at every period of time, in every place, and every species of arms . . .”⁷¹ Based on this, Guibert offered his conception of a “war of maneuver.” In this context, it is necessary to point out that, while being a proponent of citizen-armies, Guibert did not favor mass armies. “Huge armies he regarded as signs of the ineptitude of men in authority.”⁷² Displaying an orientation to “the offensive,” Guibert then opined that an army, “that travels light, living on the country, will gain new mobility, range of action, and power of surprise.”⁷³ By positing this, Guibert was presenting a trenchant criticism of the French military system in vogue in his time, which favored a large civilian baggage train that only served to encumber the operational status of the fighting force.

Guibert further sharpened his conception of a “war of maneuver” by addressing the developments in the organizational system of the army – especially the divisional system – seriously. Breaking away from the system devised by Frederick the Great, who usually deployed his forces by dividing his army and marching them in a way that would enable the parts to come together in a battle line on achieving contact with the enemy, Guibert, strove to sever the link between marching orders and the final battle order.⁷⁴ This enabled him to consider whole divisions as columns, which could cover a vast theater of operations and, which would be instrumental in forcing the enemy to turn to a position of disadvantage relative to the attacker. In Guibert’s view, such an arrangement would allow a battlefield commander to go ahead of his troops and to reconnoiter the lay of the land, which would consequently enable him to devise his particular battle-tactics, including the positioning of his independently marching divisions, based on situational specifics.⁷⁵ The result – so Guibert asserted – would be the realization of a more flexible condition on the battlefield primarily due to the essential pliability of the battle-formations in the hands of an astute commander. While Guibert overtly credits Frederick with having used such a system, especially at the Battle of Hohenfriedberg (1745), it is evident that this system found its closest of expressions in some of the operations conducted by Napoleon.⁷⁶ In sum, therefore, the system propounded by Guibert was a distinct change from the positional warfare system (based on the system of fortification) to a more flexible system of maneuvering which, more often than not, involved *forcing* the position of an enemy.

Guibert also asserted that “[p]eoples are indifferent to the fortunes of war, because prisoners are no longer slaughtered in cold blood, and the civilians of a conquered province suffer no inconvenience except to pay tribute often no heavier than their old taxes.”⁷⁷ This led him to conclude that the peoples of Europe were all “soft” and that governments which, according to Guibert, were all *despotic machineries* were weak in character. Guibert held little prospect for a change in this

scenario. Thus, instead of striving to achieve his ideal, which was a vision wherein he supposed that

a people . . . in Europe vigorous in spirit, in government, in the means at its disposal, a people who with hardy qualities should combine a national army and a settled plan of aggrandizement . . . [would be able to] . . . subjugate its neighbours and overwhelm . . . weak constitutions like the north wind bends reeds”⁷⁸

he settled on a more moderate, but in many ways also a more chilling, vision which he recommended to France. “What we must do,” Guibert said, “since we cannot have citizen troops and perfect troops, is to have . . . troops at least disciplined and trained.”⁷⁹ This tied in directly with Guibert’s conception of a “war of maneuver.” For Guibert’s system of maneuver to be successful, he held the view that “[d]iscipline must be made national. The state . . . will have a simple reliable, easily controllable administration. *It will resemble those huge machines, which by quite uncomplicated means produce great effects.*”⁸⁰ Thus, Guibert’s vision of a disciplined army was based on a system of national discipline where “*there is not a single moment of life from which one cannot extract forces, providing one knows how to differentiate it and combine it with others.*”⁸¹

But to attribute this vision solely to Guibert would be simplistic. As Foucault shows us, “from the seventeenth century, to the introduction – at the beginning of the nineteenth century – of the Lancaster method, the complex clockwork of the mutual improvement school was built up cog by cog.”⁸² Against this backdrop, Foucault shows us how “discipline [was] no longer simply an art of distributing bodies . . . but of composing forces in order to obtain an efficient machine.”⁸³ Consequent to this, as Foucault highlights, the concept of an intrinsic characteristic defining the individual human body undergoes a considerable shift. In the martial context, where the individual body was once considered as the repository of “bravery and strength,” under the system of “divisions” proposed by Guibert, it (the individual) was (and continues to be) transformed into a site of regularity and order, thus allowing for its easy manipulation⁸⁴ in terms of, say, a chronological serialization such as, for example, time-tabling.⁸⁵ This meant that the constituent elements of the division could be organized within a linear conception of time, which would enable each part of the divisional machinery to function like clockwork to produce – in a combinatorial alliance with the other parts of the division – an optimum result.⁸⁶ This would enable the commander on the battlefield to achieve an effective system of command. Thus, the commander would find it necessary to only issue the briefest of commands and would be able to realize the desired output at the most propitious moment.

Foucault suggests that the necessity of the constituent elements of this military machine to “understand” commands was overridden by the need to simply recognize signals, which in turn would trigger a prearranged reaction. Casting a perspectival eye on these developments, Foucault suggests that such a system of discipline enabled the emergence of four techniques – drawing up of tables, prescribing movements, imposing exercises, and the arrangement of tactics.⁸⁷ It is important to

note that the notion of tactics that Foucault alludes to is the *tactique* that Guibert propounded, which encompassed strategy, operations, tactics (including unit-level tactics)—in other words, all what we today understand as functionally distinct entities. The implications of this, if we recall Guibert's introductory analysis of the socio-political fabric and his notion of "national discipline," are critical. Foucault puts it well when he states, "[i]n the . . . eighteenth century states, the army guaranteed civil peace no doubt because it was a real force . . . but also because it was a technique and a body of knowledge that could project [its] schema over the social body."⁸⁸ Read in this way, Guibert's *tactique* was much more than simply a proto theory of maneuver.

While Guibert sought to supplant the theories of positional warfare—siege warfare, the system of fortifications—as propounded by Vauban and later by Puysegur and Maizeroy and others, he also remained fully committed to the core principles that underlined the Enlightenment period. Reason, masquerading as efficiency, mobility, and calculation, remained unquestioned. Thus, the tendency to see war as being subject to universal rules and principles that were globally applicable, and as being a particular mode of relationality between nation-states—guided by a set of rules that drew their inspiration from the works of, among others, Grotius, Vattel, and Hobbes—is understandable. But what Guibert's *A General Essay on Tactics* also demonstrated was how, with the aim to "project its schema," the martial mobilization of Reason began to gradually take place. This, as Foucault points out, was very much evident in Guibert's notion of a "national discipline." As we have seen, for Guibert, "national discipline" was the necessary pre-requisite that would allow the machinery of war to take advantage of "mobility, range of action, and power of surprise."

The influence of Guibert's work, specifically in the context of the conduct of war, was visible particularly in the Napoleonic campaigns. As Napoleon was to so vividly demonstrate, mobility, speed, and boldness in the conduct of operations, the insistence on reducing the encumbering baggage-train that bogged down the mobility of armies, the solving of logistical problems by resorting to a heavy reliance on the countryside, flexible maneuvering in open columns before deploying into the battle line, and the movement of divisions as independent formations were all indications of the influence that Guibert's theories had on the conduct of war. Indeed, as Gat points out, "Guibert's ideas were practically the basis of the official Ordinance of 1791 with which the armies of the Revolution went to war."⁸⁹ But, the Napoleonic campaigns, while apparently vindicating Guibert's theories, also brought to light fresh experiences and challenges. These experiences did not escape the military theorists of the times. They continued to study the problems of war and its conduct meticulously. Simultaneously, the ideals that had informed the French Enlightenment had, by now, spread throughout the European continent. In Germany, this movement was known as the *Aufklärung*.

Mind(ing) the gap: Between Guibert and Jomini

The space between Guibert's theories on war and Jomini's works is marked by the emergence of a lesser (in terms of profile, but little else) set of military thinkers

who, working from within what Gat calls a “provincial mindset,” carried forward the ideas propounded by the military theorists of an “Enlightened” France, particularly those of Guibert. This should not, however, suggest that the output of the military thinkers of the German *Aufklärung* was merely a clone of the French theoretical model. There were subtle, but significant, differences. Thus, for example, while the primary thrust of the French model was the development of a “science” of the military, which manifested itself as the “quest for a definitive formula” for all matters pertaining to war and the military, the military thinkers working in the context of the German *Aufklärung* movement, at least initially, did not follow the scientific model as stringently as did their French counterparts. Instead, their primary interest lay in the broadening of military knowledge” and its dissemination, especially in the circles of the officer corps.⁹⁰

“The emphasis on education – typical of the Enlightenment belief in the ability to transform man and society and in the value of knowledge – was particularly popular during the German *Aufklärung*.”⁹¹ This led theorists like Ferdinand Friedrich von Nicolai to react against the strict scientific-methodological program of the French Enlightenment. Thus, von Nicolai suggested that a simple study of the principles that guided the military as posited by the likes of Guibert was characteristic of the Enlightenment and that it suffered from a lacking, which was clearly evident in the clinical manner in which the study of war was being conducted. As a corrective, he suggested that the “man” within the officer (and it is important to note that von Nicolai’s suggestion was limited to only the officer corps) needed to be educated.⁹² To do this, he suggested, a broad curriculum of study was necessary. Basic education, which would include religion, art, languages, and the classics would be followed by a course of advanced studies that exposed the students to pure and applied science, only after the conclusion of which were the students to be introduced to the specifics of a purely military education, including the study of equipment, organization, armaments, military architecture, and tactics. This overarching “system” of education was further refined by Friedrich Wilhelm von Zanthier who, in his *An Attempt to Study the Art of War* (1775), stated that “if war is to be studied as a science rather than a craft, theory above all must bring order into this labyrinth by clearly defining its various branches.”⁹³

Von Nicolai’s and von Zanthier’s works are just two examples of a set of numerous studies published during this time, which concentrated on reaffirming the need to systematize the study of war. Thus, it will be noted that while maintaining the philosophical links with the core fundamentals of the French Enlightenment, the German *Aufklärung* movement, in the military context, also began to propound the need to develop the institutional frameworks within which a structured dissemination of the science of war could be conducted. The understanding of the primacy of education characterized by the careful delineation of the various disciplines that made up the science of war began to assume importance. Here again was a reaffirmation of yet another of the Cartesian ideals of understanding reality within the context of structured disciplines of study. In this connection, it is necessary to briefly revisit von Nicolai’s primary thesis.

As mentioned earlier, von Nicolai had suggested that it was the “man” within the officer that needed to be educated. This, when coupled with the vision of “national discipline” sketched out by Guibert, made for a potent mixture which, more than anything else, was instrumental in achieving the regimentation of the basic units of an army. It also provided the elementary tools with which, what Foucault calls, “the techniques of discipline” would be formulated that would eventually elaborate the procedures by which individual and collective bodies could and would be coerced.⁹⁴ It is within this context that we find a definitive conception of war that owed, in no small part, its origins to the Cartesian model of the Self, beginning to take a definite shape.⁹⁵

The rapidity that characterized the early campaigns of Napoleon was based not only on the system of maneuver as presented by Guibert, but also on a concept that would find increasing resonance in the future – that of the “line of operations.” Indeed, in 1781, Henry Humphrey Evans Lloyd had worked on this and on its wider implications. Simply put, a “line of operation” is that “line” which links a fielded army to its supply camps or depots.⁹⁶ This allowed for a new twist to be given to the original concept of a “war of maneuver” as propounded by Guibert. While Guibert sought to introduce the flexibility of military operations by reducing the primarily civilian baggage-train that accompanied the armies of his time into battle by recommending the use of the countryside by the army, in Lloyd’s presentation, the growing size of the European armies preempted the attempt of an army to feed itself by resorting to pillaging the countryside. He held the view, and correctly so, that modern armies needed their own supply chains and that these held the key to the operational flexibility of the army.⁹⁷ The line that connected these supply chains to the field army, thus, was of critical importance in the context of operational planning. Lloyd’s military ideas were not incorrect save for the fact, as pointed out by Colonel (later General) Tempelhoff, that they were not only incorrectly applied in Lloyd’s discussion of the campaigns of Frederick the Great, but were also, as was observed by Napoleon himself, too rigidly applied.⁹⁸ Lloyd (and Tempelhoff) while being essentially correct about the central importance of the “line of operations” had, however, failed to read, or at least to account for, the emerging socio-political conditions within which the battles of Revolutionary France and Napoleon had taken place. The fall of the *ancien regime* saw the rise of mass armies. These armies were different in nature from the formations of, say, Frederick the Great, in the sense that they were (at least in the initial stages) filled in by the mass conscripts who were motivated by a set of new moral forces – forces which were imbued, in general terms, by the ideals of the French Enlightenment, and by virtue of the fact that these armies lived at the expense of their enemies – both financially and in terms of logistics.⁹⁹

The same fate befell von Bulow, who, in his *The Campaign of 1800*, claimed to be the “founder of military science.”¹⁰⁰ Noting the new tactics that guided the Revolutionary Armies of France, von Bulow, however, chose to emphasize what he called the “principle of the base” and the “angle of 90 degrees.” von Bulow’s insistence on these two precepts led him to state that:

[T]he agency of military energies, like other effects of nature, becomes weaker . . . in an inverse ratio of the square of the distance; that is to say, in this

particular, of the length of the line of operations. Why should not this law, which governs all natural effects, be applicable to war, which now consists in little more than the impulsion and repulsion of physical mass?¹⁰¹

The appeal to Newtonian physics in this will not be missed. von Bulow, thus, offered – quite literally – a “science” of strategy that was geometrical, and by pushing the logic of his argument to the limit, he also offered a science of politics, which could be mathematically calculated. von Bulow’s theoretical efforts, however, failed in the same way as had the efforts of Lloyd and Tempelhoff. The evidence and experience of war did not seem to match his theoretical postulates. The experience of Napoleon’s Italian Campaign of 1796–97 did much to disprove von Bulow’s theory of the “angle of 90 degrees” and Napoleon’s targeting of the mass of his enemy’s armies as the object of operations, which involved the massive and rapid concentration of his own forces against them, forsaking any and all other considerations, also served to undermine the narrow logic of the “line of operations.”

From August 1793 onwards, the *levee en masse* represented a radical mobilization of the French masses, though this was a project that was already underway for a while before then. It was, in part, a sub-set of the endemic violent chaos that followed the French Revolution and a handy tool for the vanguards of the Revolution to repel the threats that the counter-Revolutionary Allied advances posed to the nascent Republic. While the *levee en masse* may not have been as universal as is often claimed, it was, nevertheless, widespread and represented a massive reorganization of French society. Among other things, the *levee en masse* was the first sign of an emerging civic-militarism that would afflict society. Thus, the Act of Conscription read:

From this moment on until the enemy has been chased away from the territory of the Republic, all French are in permanent requisition for the service of the armies . . . Young men will go to battle, married men will forge arms and transport supplies; women will make tents, uniforms, and serve in hospitals; children will pick rags; old men will have themselves carried to public squares to inspire the courage of the warriors, and to preach hatred of the kings and the unity of the Republic.¹⁰²

This was a veritable call to arms for a nation and no aspect of society was exempt from the duties that the State demanded. If, in this context, we recollect the call for “national discipline” issued by Guibert in conjunction with the calls made in the wake of the German *Aufklärung* movement to “educate the man within the soldier,” we can see how the institutionalization of war by the State proceeded. As this process took shape, a core of seasoned military professionals – Carnot, Berthier, and Napoleon (among others) – began to lead this generally disorganized mass army to startling victories. The question that bedeviled observers of these frenetic, but victorious, operations engaged in by this newly constituted army was: How did they do it?

Jomini's science of the "Art of War"

Baron Antoine Henri de Jomini represents the last of a long line of illustrious Enlightenment military thinkers to present a theory of war based on "immutable" principles and is arguably one of the most influential theorists, though often under-rated, to claim the mantle of being the "founder of modern strategy."¹⁰³ Jomini's answer to those taken aback by the rapid and victorious campaigns of Napoleon and his cohorts was simple and elegant and it endeared him for the next three decades to the military professionals of the time. He said:

Strategy is the key to warfare; that all strategy is controlled by invariable scientific principles; and that these principles prescribe offensive action to mass forces against weaker enemy forces at some decisive point if strategy is to lead to victory.¹⁰⁴

He then went on to reiterate this by saying:

[T]he fundamental principles upon which rest all good combinations of war have always existed . . . these principles are unchangeable; they are independent of the nature of the arms employed, of times and places . . . Genius has a great deal to do with success, since it presides over the application of recognized rules, and seizes, as it were, all the subtle shades of which their application is susceptible. But in any case, the Man of genius does not act contrary to these rules.¹⁰⁵

From this it will be evident that Jomini was faithfully following the trajectory set out by his illustrious predecessors. However, Jomini was also singular by virtue of the fact that while he worked to reduce strategy to universal principles, he also made the determination that tactics were difficult, indeed impossible, to regulate.¹⁰⁶ It will be noted that while Jomini was following the original bifurcation between strategy and tactics effected by von Bulow, he remained more cognizant of the effects of moral forces and of revolutionary technology on the battlefield.¹⁰⁷ Thus, Jomini tempered von Bulow's stringent scientific orientation by following closely the Napoleonic method of conducting war while in the process also revising Lloyd's theory of the "line of operations."

While Lloyd, as we have seen, tied the concept of the "line of operations" to supply, Jomini, however, considered them in light of communications. This, in itself, was a radical move in that it altered the view of the commander to recognizing his enemy as an active participant in battle. The reflexivity of an army thus depended not only on securing its own "line of operations," but also in interdicting that of the enemy's. This was a new twist given to the "art of maneuver." The object of maneuvering was not merely to exploit the positional weakness of the enemy, but to bring him to battle and, following the Napoleonic practice, to destroy the fighting capability of the enemy. While this may convey a sense of the criticality of the "decisive battle," for Jomini, however, it assumed a position co-equal to that of maneuvering, for he maintained that maneuvering could equally dislocate an enemy to such an extent so as to force a decision on him.¹⁰⁸

The importance of maneuvering for Jomini was highlighted by the campaigns of Napoleon, which he followed avidly. He recognized that not only was a “battle” necessary, it was also necessary to pursue a withdrawing enemy. Thus, to be able to threaten the “lines of operations” of the enemy, he suggested the “envelopment” which was to be directed at the extremities of the enemy.¹⁰⁹ This would, Jomini theorized, not only threaten the rear of the enemy, but also create possibilities that would enable the cutting off of his line of retreat. It was a stratagem that was used very often by Napoleon.¹¹⁰ Jomini also considered, aside from the envelopment, the assumption of a central position – under some circumstances – to be equally important. Jomini suggested that if envelopment was not feasible due to either geographic conditions or the relative position of the enemy’s army, the attempt should be made to frontally assault the enemy’s position in a bid to create a breach between his forces. This would, Jomini conjectured, allow an attacker a great deal of flexibility in defeating the enemy by maximizing the “interior lines of operations.”

One can see the heavy influence of Napoleon in much of Jomini’s theories. Napoleon’s defeat of General Mack at Ulm in 1805 and the destruction of the Prussian army at Jena-Auerstadt in 1806 were classic examples of Jomini’s theories being put into practice. Napoleon’s swift maneuver towards his enemy’s rear and line of communications were a vindication of the Jominian “art of war.” But in 1815, Napoleon took the option of frontally assaulting the opposing Allies. He was partially successful when he broke through the center of the Allied line thus separating the British and Prussian armies, and defeated the Prussian Army at Ligny. However, poor coordination between sections of Napoleon’s army enabled the Allied armies to recover from their initial surprise and reunite, at which point, Napoleon lost the initiative and was decisively defeated at Waterloo. This was the first sign that the reduction of warfare to principles, as propounded by Jomini, was suspect.

Like most of the Enlightenment military theorists before him, Jomini had made tacit assumptions about a number of things.

1. First, he had assumed that war and its conduct could be scientifically explained. This betrayed his beholden-ness to the classic notion of a *universal mathesis* around which much of the philosophy of the Enlightenment clustered. Additionally, Jomini’s understanding of war was limited to the political regimes that he was familiar with. This led him to describe the conditions within which wars could be engaged in. Thus, he took the pains to highlight wars as being defensive, offensive, national, for recovering rights, for expediency, of intervention, of opinion, and religious.¹¹¹ Within all this, it will be noted, Jomini assumed the primacy of Reason. Indeed, it could be ventured that, for Jomini, the State was the embodiment of Reason.
2. Second, it was obvious that though Jomini did lay a great deal of emphasis on interdicting lines of communication and on the merits of envelopment, he had not ascribed any degree of “real” autonomy to the enemy. Indeed, his entire theorization was premised on the assumption that the opposing combatants in war would operate along very similar lines.¹¹² This, as Shy points out, was self-evident in Jomini’s

preoccupation with “strategy” – a set of prescriptive techniques for military analysis and planning that has continued to dominate thinking on the subject, and he did it by . . . approach[ing] . . . the problem of war, abstracting it from its political and social context, emphasizing decision-making rules and operational result, turning war into a huge game of chess.¹¹³

Of course, it should be noted that in this he was not alone – all his predecessors had made a similar assumption.

3. Third, Jomini was fully aware of the “demands” of science, in whose province he saw the art of war unfolding. Thus, he was careful to note when he introduced new nomenclatures that, “in the development of a science, it is wrong for the same word to designate two very different things”¹¹⁴ While the intent of Jomini is admirable, it is also indicative of the extent to which Jomini was committed to the theorization of war as a science, and of his faithful adherence to the principles of the scientific method.
4. Fourth, while not as insistent as Guibert on the question of national discipline, Jomini, nevertheless found himself compelled to reiterate the critical importance of military institutions, thus carrying on the call for a “rational” educational system which would serve to strengthen the military and thus, the State. He held the view that a military institution had to provide for not only a good recruiting system, but also a strict (but not humiliating) discipline, and an efficient system of organization and instruction.¹¹⁵ He underlined the importance of military institutions and of the military by stating that every government should “make the army the object of constant care.”¹¹⁶ But Jomini also went further and in this he anticipated Clausewitz. He held the view that

civilized governments ought to always to be ready to carry on a war in a short time – that they should never be found unprepared. And the wisdom of their institutions may do much in this work of preparation as foresight in their administration and the perfection of their system of military policy.¹¹⁷

The last of the aforementioned Jominian assumptions necessitates a brief explanation. The central thrust of Jomini’s statement highlights the consideration of war as being an inherently political activity, which “civilized governments ought to always be ready to carry on in a short time.” To be sure, Jomini explicitly stated that he was “far from advising that states should always have the hand upon the sword and always be established on a warfooting.”¹¹⁸ But then, he equally noted that “[i]t is particularly necessary to watch over the preservation of armies *in the interval of a long peace*.”¹¹⁹ Jomini then, it may be said, was working on the assumption that the condition of existence of the State was a condition of war and that “peace” was always a “long interval” and not the original condition of existence of the State. What is of particular interest is the faint echo that is discernable in these words of Jomini – words that achieve a much greater visibility in Foucault’s *Society Must Be Defended*, wherein Foucault explicitly overturned the classic Clausewitzian

dictum of “war being an extension of politics by other means.” Thus, despite the often bad press that accompanies the work of Jomini in the context of the history of military thought, it cannot be denied that he marked himself as being cognizant of not simply the fact that war had a politico-military dimension but also for intuiting that there was always a dimension of war that was far in excess of the political.

A preliminary assessment

This admittedly selective overview of the emergence and evolution of military theory during the Age of Enlightenment allows us to draw some conclusions about the operative *concept* of war that guided the theorizations that accompanied it.¹²⁰ What demands our critical attention within the context of this period of history is this: How were military forces designed and deployed? How was the battlefield conceptualized? To what end were these deployments made? And ultimately, what was the understanding of war that underpinned the theoretical and practical advances made in the context of the conduct of war during this timeframe?

As we have seen, from de Saxe to Jomini there was a marked consistency in determining how and why military forces were designed and deployed. Collectively, they represent a sharp break from the thinking regarding war and its conduct in the medieval age. The most significant signature of this break was, of course, the emergence of Reason as a foundational organizing principle which, among other things, ultimately led to the progressive fracturing of the direct links between God and Man. This turn to Reason, particularly in the context of the study and practice of war, was enabled by the increasingly popular view – held by some of the most distinguished military theorists of the time – that the conditions within which existence is possible – where “existence” is understood, at the very least, as *bare life* – was marked by disorder and chaos, and thus a degree of systematization was necessary. This was deemed achievable by deploying Reason. Thus, the evolution of military theory was marked by a definite bias towards increasingly “scientific” methods which assumed the Real (or Reality) to be based on experience which, in turn, was grounded within a particular conception of the Self. Thus, though there were some minor variations of this method – such as those proposed by, among others, Hume – nevertheless, the foundations of the methods of science remained unshakable. Thus, as we have seen, there was a general orientation to try to account for war and its conduct as a science and in terms of a set of universal principles that would explain not only the conduct of war, but also the *concept* of war.

The emergence of these military theories – backed by a growing body of creative and philosophical literature – also gave rise to what Foucault identifies as “an expression of disciplinary power.” In a sense, this was perhaps inevitable for the systematization of a field of human activity necessarily involved the systematization of the human. There were, broadly, two aspects to this. The first was the organization of Man in terms of a body-politic – a population – and the second was the organization of the very constitution of the body of Man. The foundation on which this occurred was and remains a radical theory of power which, while it may not have been explicitly stated as so, was, in essence, just that and it played a key,

but understated, role in the evolution of the concept of war and in the development of the theories and practices that accompanied it.

It was with Descartes' expression of "I think, therefore, I am" that this theory of power found its material expression, for the object of the Cartesian attempt was to create and invest authority and sovereignty in and to the "I" that thinks. Descartes' methods of observation and "power of reasoning" gave legitimacy to only that which fell within the ambit of thinking. Thus, in effect, what Descartes did was to define the norm and to invest it with power (as a necessary consequence of the act of thinking) and in doing so, the "I" invested itself as Sovereign which, as Agamben points out, was defined by Schmitt as "he who decides on the state of exception."¹²¹ What followed was the gradual institutionalization of this norm as a signature of power. Working from the premise that the "I" that "thinks" determines Reality, then the right to exercise power over and within this Reality was deemed to reside in the "I." In this sense, the "I" was considered to be sovereign within the construct of Reason and, as such, was identified as an embodiment of Reason itself. As Foucault shows us, albeit in a different context, this also gave rise to the notion of a subject, which the very idea of sovereignty presupposed.¹²² This found its material expression in the military theories that emerged during the Enlightenment.

As we have seen in the context of our discussion on the evolution of the juridico-politico-military trends in the pre-Clausewitzian era, the primary objective of military theory was to rationalize and regulate war and its conduct. Thus we found military tactics, from de Saxe to Jomini, striving to establish precise measures by which such a regulation could take place. This also meant that the fodder of war, that is Man, also had to be regulated. This was done, as Foucault convincingly demonstrates, by devising techniques of discipline such as the devising of timetables, the distribution of bodies in space, and in the organization of these bodies in specific ways – all of which, collectively, contributed to the composition of "force."¹²³ While at one register these were manifestations of the techniques of discipline, they were also, in the context of military theory, the principal elements that enabled the devising and deployment of tactics. Thus, we find that the rise of discipline was intimately connected with the tactics that were devised and deployed outside and on the battlefield.

Further, as we have seen, the conventional Hobbesian construct of the *Leviathan*, which is based on a reading of Hobbes' assessment of a "natural condition," was characterized by a condition of contradictory self-interest. The most common readings of Hobbes identify three conditions that characterized war.

1. Within a civil state, where contradictory self-interests are not resolved;
2. Between "savages" who do not have the benefit of the civil state; and
3. The relations that exist between civil states.

This, within the Hobbesian construct, is the signature of the warlike condition of existence within which Man existed, and which, in turn, provided Hobbes with the rationale for proposing the construction of the *Leviathan*. This view of the Hobbesian construct of the *Leviathan* is one that while removing the basis for war

by pointing to the existence, indeed necessity, of the *Leviathan*, remains grounded in the assumption that the originary condition of Man was essentially warlike. This is the most common and popular understanding and interpretation of the Hobbesian "state of war." But, as Foucault points out, such a reading would only be a partial view of the dynamic that empowered the Hobbesian theory.

Foucault alerts us to the possibility that Hobbes may be considered as the theorist "who said that war is both the basis of power relations *and* the principle that explains them."¹²⁴ By highlighting this, Foucault underscores how the Hobbesian theory of power can be re-problematized, which leads us to the somewhat counter-intuitive revelation that what the Hobbesian "state of war" actually presupposes is limited to a contest between equals, for a contest between unequals would always come to an end to the benefit of the stronger side, which in turn would bring about, theoretically, a cessation of the condition of war. Now, Foucault asserts that the signature of this condition is an interplay of representations, which is also indicative of a kind of diplomacy that maintains, or seeks to maintain, a near equal parity between two opposing forces. It is this analysis which leads Foucault to suggest that perhaps "Hobbes . . . does not begin with war at all."¹²⁵

Having clarified the nature of the Hobbesian "state of war," Foucault then proceeds to show us how and under what conditions sovereignty and the State emerged. In sum, Foucault contends that the notion of sovereignty (and of the State) formulated by Hobbes was based not only in terms of "institution," but also in terms of "acquisition." In other words, what Foucault draws our attention to is how the institution of the "sovereign" was based not so much on the transfer of rights or power, but on the *decision* to enable the representation of rights and power. Given this, there is no actual loss of rights and power to those who decide to have their rights and power represented by the sovereign – be it an individual or a collective body. Why? Simply because, the sovereign is a co-equal with those it represents, albeit as a "first among equals." This co-relation between the sovereign and the individual allows for the former to also acquire, like the latter, an individuality – both real (like those whose rights and powers it represents) and artificial (by virtue of the fact that it is artificially constructed by those whose rights and power that it represents).¹²⁶ On the other hand, Foucault describes sovereignty by acquisition in terms of the "will to prefer life over death," which, according to Foucault, "introduces us into . . . a juridical regime . . . and it is as juridical and legitimate as the sovereignty that was established through the model of institution."¹²⁷ Pursuant to this, Foucault shows us the instance where, according to him, Hobbes makes an appeal to a more primal "will to live" with the example of the "child and its mother."¹²⁸ In Foucault's assessment, therefore, "[f]or sovereignty to exist, there must be – and this is all *there must be* – a certain radical will that makes us want to live, even if we cannot do so unless the other is willing to let us live."¹²⁹

The question that must be posed here is this: Is there a subjectivity from which the will to live emerges? Indeed, what is that which wants to live? It will be noted that regardless of the radical interpretation provided by Foucault, the basic premise of the Hobbesian construct, as per a Foucauldian reading, was a "life" that had to have the ability to display a coherent "will to live." Further, "living" had to be

construed in a particular way which was, and remains, intimately tied to the notion of death as a Limit-Condition. Now, there are a number of ways by which an expression of the “will to live” may be construed. Yet, in the first instance, we find that for an entity to “will” living, it must know not only what “a life” means, it would also have to know what “to be alive” means in addition to knowing what the Other of “to be alive” means. Thus, at the very least, there is an implicit assumption of a “thinking entity” in this Foucauldian reading of “the will to live.” In the Cartesian context, this would be the subject for the “will to live” points to the presence of an “I-ness” which desires to live. It will be noted that the “I-ness” is determined *after* the undetermined “I” in Cartesian construct has been determined by an act of thinking. In Descartes’ formulation, therefore, “thinking” was the signature of “life,” indeed of existence and the absence of which was death. Thus, it will not be wrong to state that it was this subject that was assumed to be subjected to the disciplinary modes of thinking which also underwrote much of the juridico-political and military theories of the Enlightenment. The assumption was always made that the subject – be it the individual or the State – of war was a subject who could be assumed to, at the very least, display the will to live. From this to construct the edifice of the juridico-political system, which would not only explain, but also shape and control, the actions of Man was an easy matter.

With reference to the earlier discussion it is also necessary to briefly dwell on the implications of the phrase – to live. What this phrase means, at this point, is not central to the discussion. What is more important, particularly in the context of this study, is to recognize that this phrase held a common meaning across the board, and the crucial role that it played in calibrating the formation of a set of martial concepts, theories, doctrines, and institutions that were underwritten by a notion of a *universal mathesis*. It will be appreciated that this notion of a *universal mathesis* also allowed for the creation of an enemy who was an Other relative to the Self. Put differently, it could be said that the strategy of the Cartesian methodology was to assert the Self’s sovereignty by “thinking” the “norm.” Thus, that which lay outside the norm was not labeled unreal (or impossible), but *ab-normal*. *Ab-normality*, for the Self, was a condition that was included within the conditions of possibility of the Self for it necessitated the recognition of the condition of *ab-normality*. The enemy, therefore, had to fall within this construct of *ab-normality* and not outside it.¹³⁰ Thus, the Self *made* the Other and, by extension, the Enemy. In other words, the Enemy (alternatively, the Other) while not necessarily being within the ambit of the Reason of the Self, nevertheless, remained firmly grounded within Reason-as-such. It is in this sense that Vattel’s injunction that the “object of war was to bring an enemy to reason” is revealing on more than one count. Indeed, this is also where Foucault’s analysis of Hobbes is most relevant for, as we have seen, Foucault showed how the Hobbesian notion of war presupposed an “equal opposite.” A problem, however, arises if the notion of the equality is removed from the contestants and we posit an Absolute Other (as contrasted with an excluded Other) in place of the traditional adversary of the Self. But this is a problem that did not trouble the military theorists of the Enlightenment. They did not consider the need to think in terms of an Absolute Other given their conceptual allegiance

to the notion of a *universal mathesis* that followed the Cartesian construct of the Self.

Thus, we find that there are at least five elements that consistently emerge from our overview of the military theories of the Enlightenment. First, the concept of war was a function of a fundamental conception of the Self, which owed its origin to the Cartesian philosophical methodology. It was this which enabled the formulation of military theory in terms of a science and was deemed firmly grounded on Reason and, in this sense, was also considered universal. Second, the Enemy was not the Absolute Other of the Self; rather, it was a construct of the Self. In this sense, the Enemy was an entity that was easily recognizable by the Self as it employed the same strategies and tactics as the Self.¹³¹ Third, the emerging concept of war spawned a plethora of institutions – both military and juridico-political – which served to reinforce this emerging concept of war. Further, the operative conception of the Self enabled, rather than hampered, the “control” that was exercised over bodies – the evidence of which, as we have seen, resided not only in the institutions but also in the very tactics and strategies that were employed in the context of war. Fourth, this condition also led to the developing of specific disciplines of knowledge, which served to organize the Real (or Reality). And fifth, despite the propensity to employ Reason to make Man, in Descartes’ words, “master of nature,” there remained elements that invariably escaped the confines of Reason. The problems associated with addressing these, in the martial context, were to the Genius.

2 Clausewitz and the architectonic of war

What Kant referred to as the “lawless use of Reason” found expression in the “doctrine that geometrical ‘reason’ is the only criteria of truth, so that there can be no limit to the application of reason operating on the basis of experience, and hence of knowledge.”¹ This, in many ways, radical interpretation of the Cartesian project of Reason was – as we have seen – applied to the study and analysis of the conduct of war albeit with not very encouraging signs of success. Simultaneously, however, a more successful project to craft the *concept* of war was underway in the philosophico-juridico-political context. Unlike its counterpart in the domain of military theory, which failed to satisfactorily bridge the gap between the theory and practice of war, this project of developing and articulating a *concept* of war, which also took its inspiration from Descartes, particularly in his theorization of the Self (Subject), succeeded in (1) ensuring that the object of war was to bring an enemy to Reason, (2) developing and articulating the juridico-political framework within which war could be “reasonably” discussed, and (3) making war subject to the political and ultimately to a specific notion of the Human. This is most evident in the works of Jomini. As we have seen, though Jomini held that strategy was governed by scientific principles, and that there were fundamental principles upon which all good combinations of war have always rested and existed, he remained cognizant of the political context in which these “scientific principles” of war and strategy operated and of the acute disorienting potential that the occasional encounters with uncertainty, chaos, and the unknown had on the battlefield.

It was only with the Copernican revolution that Kant brought about in philosophy that a more mature, nuanced, and confident approach to Reason was achieved. This was equally reflected in the domain of war studies. But this in no way meant that the ambition of the theorists and practitioners of war was in any way lessened. On the contrary, the ambition now was to develop a framework of war so flexible that it would be able to account for not only chaos, chance, and uncertainty, but also provide a Reason-able basis on which the question regarding war would and could be contained.

It is in this context that Clausewitz is claimed to be the pre-eminent theorist of war – at least in the Western world. For the most part, this accolade conferred on Clausewitz is justified for, with him, the project of theorizing war was so comprehensively enframed that what has since followed have been mere footnotes – the

addition of details – that only serve to fill in the gaps that Clausewitz's theory did not address. But this reification of the paradigmatic Clausewitzian theory of war, while well deserved, is also highly problematic for it carries with it the implication that the regime of thought that guides our current and emerging theorizations on and of war is an archaic one. As we will see, this regime of thought is archaic not because its genealogy can be traced to at least the Age of Enlightenment, but because, in effect, its evolution had already come to an end with the manner in which the theorization of war took place pioneered by Clausewitz himself.

The romance of Clausewitz

The influence of Kant on Clausewitz is a much debated and disputed aspect of the history of the evolution of military thought.² Some have contended that while Kant may have, to some degree, influenced Clausewitz, the evidence is not as clear as, for example, the influence of Montesquieu or even that of Fichte and Hegel.³ Others have discounted, indeed dismissed, the necessity of spending much time on tracing the philosophical influences on Clausewitz's thinking. These latter commentators have suggested that it is not surprising that Clausewitz's *magnum opus* betrays the prevalent philosophical tendencies of his times since Clausewitz, after all, was not only "bookish and introverted," but also well networked with the leading intellectuals of the time.⁴ What is important to them, however, is the elegance of the Clausewitzian system which, while quite specific in detailing the rationale of individual military operations and situations, nevertheless also managed to convey its universal nature.⁵ And then there are those who, while certainly not dismissing Clausewitz, reject the principal determinants of the Clausewitzian universe – but only on the grounds of being obsolete. They, more often than not, call for a "reevaluation of all values."⁶

Given that the life of Clausewitz has been documented in great detail, it is not necessary to review the same here. Nor will a general exegesis of the Clausewitzian theory, which has been equally well documented, occupy our attention.⁷ Instead, we will engage with what are, in the context of this study, critical issues within Clausewitz's theory of war – thematically arranged as (1) method, (2) theory, and (3) strategy. Within this schematic, we will not only contextualize Clausewitz's insistence on the subordination of war to politics – made famous by the now well-worn dictum, "war is an extension of politics by other means" – we will also pay close attention to how Clausewitz addressed the phenomena of chance and uncertainty, and how and in what light he viewed the "commander" and his role.

This will allow us to (1) outline a Clausewitzian architectonic of war, and (2) to engage with the philosophical core around which the architectonic of war – as a strategic ensemble – sustains itself. In the wider context of this study, the latter objective will have far-reaching consequences for it will allow us to suggest – here recalling Szafranski – that (1) Clausewitz's efforts should be understood as not simply a response, but also as a *mode* of response to the emerging epistemological challenges of his time, and (2) that which may have begun as an epistemological

exercise has now assumed an ontological character – somewhat aided and abetted by Clausewitz himself.

Clausewitz, methodologizing . . .

“Clausewitz’s reformulation of the concept of military theory, which was directed against the theoretical outlook of the Enlightenment, was bound up with his effort to devise an adequate military theory of his own.”⁸ This conceptual reformulation took a dual form. In the first instance Clausewitz, dissatisfied with the efforts of his predecessors, took to critiquing their theories and systems of war. Second, as Clausewitz’s thinking matured, he engaged in not simply a critique of the earlier systems but in a more positively oriented problematization of war itself. Paret suggests that this second mode, for Clausewitz, was more programmatic.⁹

In his essay, “On the State of the Theory of War,” Clausewitz wrote – “we expect great advantage from an intelligent development of theory, partly for the training of young students, and even more for the development of the art itself.”¹⁰ Then, after clarifying that “method” is “a constantly recurring procedure that has been selected from a number of possibilities . . . [which] becomes routine when action is prescribed . . . rather than by general principles,”¹¹ Clausewitz insisted that:

It must necessarily be assumed that all cases to which such a routine is applied will be essentially alike. Since this will not be entirely so, it is important that it be true of at least *as many as possible*. In other words, methodical procedure should be designed to meet the most probable cases . . . based on . . . the *average probability* of analogous cases. Its aim is to postulate an average truth, which, when applied evenly and constantly, will soon acquire some of the nature of a mechanical skill, which eventually does the right thing almost automatically.¹²

Further, in 1808, in a note titled, “On Abstract Principles of Strategy,” Clausewitz sketched out, albeit tentatively, a structure that would eventually integrate the rich diversity of historical experience, and a methodology that would allow for a universal approach to the study and distillation of the same.¹³ As his letter to Fichte written in January 1809 shows, Clausewitz harbored the idea that underlying the diversity of historical experience, there did exist a universal constant element – an element that was the object of theory – “the lasting spirit of war.”¹⁴ What is interesting is that, for Clausewitz, this attention to the presence of a “universal constant element” which, in the case of war, was “the lasting spirit” was not limited to the martial context. Thus, for example, in a note written in 1807 by Clausewitz to his then fiancée, Marie, he observed that:

[R]eligious feeling in its elemental purity will eternally exist in men’s hearts, but no positive religion can last forever. Virtue will eternally exert its beneficial influence on society; but the universality of this global spirit cannot be expressed in the restrictive form of a code of laws, and form itself will shatter

sooner or later when the stream of time has washed away or reshaped the surrounding contours.¹⁵

The intellectual reference made in this note can be traced, if not directly to Kant, then at least to Schleiermacher, who was an avid Kantian.¹⁶ It is also indicative of Clausewitz's familiarity with at least the general tenets of Kant's philosophy and its methodological practices. It is, therefore, not surprising that Clausewitz did not, as his predecessors were wont to do, approach the study of history dogmatically.

More importantly, however, we should not ignore the fact that, in philosophical terms – like Kant in the field of philosophy – Clausewitz was also caught between the Scylla of the a priori and the Charybdis of experience. Thus, in 1809, he noted:

Formula [is] abstraction. When by abstraction nothing which belongs to *the thing* gets lost – as is the case with mathematics – the abstraction fully achieves its purpose. But when it must omit the living matter in order to hold to the dead form, which is of course the easiest to abstract, it would be in the end a dry skeleton of dull truths squeezed into a doctrine. It is really astonishing to find people who waste their time on such efforts, when one bears in mind that precisely that which is the most important in war and strategy, namely the great particularity, peculiarity, and local circumstances, escape these abstractions and scientific systems.¹⁷

This suggests three fundamental points. First, as mentioned earlier, Clausewitz, like Kant, was concerned with the relation between the a priori and experience. Clausewitz, like Kant, also disavowed choosing between the one and the other, and like his intellectual predecessor, Clausewitz attempted to bridge what he deemed to be the gap between the two. Thus, in his more mature *On War*, Clausewitz asserted, "[t]heory exists so that one need not start afresh each time sorting out the material and plowing through . . . it is meant to educate the mind of the future commander . . . not to accompany him onto the battlefield."¹⁸ To support this contention, Clausewitz further noted that:

If the theorist's studies automatically result in principles and rules, and if truth spontaneously crystallizes into these forms, theory will not resist this natural tendency of the mind . . . this is in accordance with the scientific law of reason, to indicate the point at which all lines converge, but never to construct an algebraic formula for use on the battlefield. *Even these principles and rules are intended to provide a thinking man with a frame of reference for the movements he has been trained to carry out, rather than serve as a guide which at the moment of action lays down precisely the path he must take.*¹⁹

Second, the note refers to that from which, by abstraction, nothing gets lost – "the thing" or the "the thing-in-itself." This demonstrates a recognition and understanding of Reason in terms of an "elemental purity [that] will eternally exist in men's hearts" – in terms of "scientific laws" and as a priori. Third, the note also reflects a

conviction that “that which is the most important in war and strategy, namely the great particularity, peculiarity, and local circumstances, escape these abstractions and scientific systems.” It is evident that Clausewitz had already worked out the implications of these in as early as 1807 for, in an elegantly written note to Marie, Clausewitz had noted that “the universality of this global spirit cannot be expressed in the restrictive form of a code of laws . . . [for] . . . form itself will shatter sooner or later when the stream of time has washed away or reshaped the surrounding contours.”²⁰

Gat suggests that the note written by Clausewitz in 1807 betrays a fusion of Enlightenment and Romantic influences in Clausewitz’s thinking and work, particularly, the “blending of a high degree of sensitivity to the diversity of historical experience – with a belief in certain universal elements . . . typical of the early period of historicism.”²¹ Be that as it may, from the perspective of this study, these three points also inform Clausewitz’s strategic intent – the positing of an architectonic which, while not being dogmatic, and thus architectural – as he perceived the systems offered by his predecessors as being – would nevertheless be a universal frame of reference for the discussion of war, particularized by the specifics of individual experience. Clausewitz’s methodology, therefore, remained a balancing act between the development of rules and principles which would, in his words, “not be a positive doctrine, a sort of manual for action,” rather, it would be a critical analysis which, to Clausewitz – here betraying a distinctly Kantian influence – was “the application of theoretical truths to actual events.”²² These observations, taken together, serve not only as examples of the significant indebtedness of Clausewitz’s martial theorizations to the Kantian philosophical project, they are also representative of a core philosophical tension that runs through the heart of his *On War*.

Despite what we can already discern – albeit faintly – as being an emerging architectonic in Clausewitz’s theoretical efforts, we should not ignore his insistence on asserting that:

Given the nature of the subject, we must remind ourselves that it is simply not possible to construct a model for the art of war that can serve as a scaffolding on which the commander can rely for support at any time. Whenever he has to fall back on his innate talent, he will find himself outside the model and in conflict with it; no matter how versatile the code, the situation will always lead to the consequences . . . *talent and genius operate outside the rules, and theory conflicts with practice.*²³

Thus, one may ask: Given the “nature of the subject,” how then is it even possible to attempt at providing a theory of war?

Clausewitz, theorizing . . .

The answer lies in one of the most curious, and by far the most interesting, sections of his famous text, *On War*, titled, “On the Theory of War.” After engaging in a

brief discussion between the understandings of war as a science and as an art, which need not detain us, Clausewitz then proceeded to identify the "Alternatives which Make a Theory Possible."²⁴ Clausewitz's central concern was to highlight how theory need not necessarily conflict with reality – a criticism that he continually levied on his predecessors and their ultra-rationalistic theories of war. Though the problem associated with reality is essentially an ontological one, Clausewitz began by suggesting that "[i]t is the task of theory . . . to study the nature of ends and means"²⁵ thus calling for a consideration of the problem in epistemological terms. Further, Clausewitz insisted on such an epistemological consideration by defining war as "fighting, for fighting is the only effective principle in the manifold activities generally designated as war."²⁶ The significance of this, Clausewitz pointed out, lay in the fact that a general theory which purports to be "valid for the majority of the cases and not completely unsuitable for any . . . must be based on the most prevalent means and their most significant effects."²⁷ To further reiterate the point, Clausewitz also draws our attention to the two main categories that characterize war, namely, the preparations for war, and war proper.²⁸

Following through with this program, Clausewitz next attempted to identify what he perceived to be the "Principle Problems in Formulating a Theory of the Conduct of War."²⁹ As pointed out earlier, Clausewitz suggested that "theory should be study, not doctrine." When read in the context of the principal problems that are confronted while formulating a general theory of war such as, the effects of danger, intellectual qualities, moral forces and effects, and the uncertainty of information, we find that Clausewitz's attempt was not so much to erect an immutable, indestructible, and universal architecture of war, rather, it was an attempt to lay out the field of war – a space or a domain that would, in his words,

admit the feasibility of a satisfactory theory of war – *one that will be of real service and will never conflict with reality*. It only needs [according to Clausewitz] intelligent treatment to make it conform to action, and to end the absurd difference between theory and practice that unreasonable theories have so often evoked.³⁰

This, as we have seen, Clausewitz proceeded to do by delineating the "concepts of method and routine . . . that governs the world of action like a duly constituted authority."³¹ Only after repeatedly clarifying the epistemological implications of the problem, did Clausewitz partially address the ontological dimensions of the problem by suggesting that the primary purpose of any theory was "to clarify concepts and ideas."³²

Clausewitz identified law, principle, rule, regulations and directives, and method as being "the logical hierarchy that governs . . . action."³³ But he was too astute and philosophically-minded to fall into the trap of propounding laws that could or would rigidly govern war and in this he clearly distinguished himself from his illustrious predecessors. Clausewitz chose to ignore the two narrow and formal understandings of law – first, "as a matter of cognition" where it is "the relationship between things and their effects," and second, "as a matter of will . . . synonymous

with decree and prohibition.”³⁴ Instead, Clausewitz artfully opted for an understanding of law which, in his own words, “is the broadest concept applicable to both perception and action. *In its literal sense, the term obviously contains a subjective, arbitrary element, and yet it expresses the very thing on which man and his environment essentially depend.*”³⁵ This he related to the notion of principles. Consider, for example, the following:

In the conduct of war, perception cannot be governed by laws: the complex phenomena of war are not so uniform, nor the uniform phenomena so complex, as to make laws more useful than the simple truth. . . . Nor can the theory of war apply the concept of law to action, since no prescriptive formulation is universal enough to deserve the name of law be applied to the constant change and diversity of the phenomena of war.³⁶

For any theorist attempting to develop and articulate a general theory of war, this poses a formidable problem for, as Clausewitz’s words indicate, while the phenomenon of war may be a universal one, its particular manifestations are too complex and diverse to be codified under the heading of “laws.” But Clausewitz gets around this hurdle by discussing principles, which he suggests are

[the] . . . law[s] of action, but not in its formal, definitive meaning; [they] represent only the spirit and the sense of the law: in cases where the diversity of the real world cannot be contained within the rigid form of law, the application of principle allows for a greater latitude of judgment.³⁷

Further, Clausewitz drew a distinction between an objective principle and a subjective one where the former was based on objective truths, while the latter on subjective considerations. In this way, Clausewitz was able to close the gap between rules and laws by emphasizing, a trifle disingenuously, on their being roughly “synonymous with principle.”³⁸ Clausewitz thus indicated that laws, principles, and rules—understood in the aforementioned sense—“enables us to derive a general law of action.”³⁹ In the context of this study, it is important to mark that this is nothing less than a statement exclaiming the strategic intent of Clausewitz’s celebrated, albeit incomplete, work, *On War*, which was to provide a general theory of not simply the manifestations of war, but also of the phenomenon of war itself.

Clausewitz, strategizing . . .

Admittedly, Clausewitz related this most curious assessment to a narrower discussion of strategy and tactics, but the implications of his theory-building exercise cannot be ignored. Simply put, what Clausewitz was engaging in was the development of a structure of thinking that would guide not simply the employment of strategy and tactics in the conduct of war, but also a general strategic mode of thinking about war. In other words, principles and method both of which, it will be appreciated, are descriptive and prescriptive in nature, form the sinews of a patently Clausewitzian

architectonic of war.⁴⁰ Recall, in this context, Clausewitz's letter to Marie (1809). In it he wrote:

[I]t is really astonishing to find people who waste their time on such efforts, when one bears in mind that precisely that which is the most important in war and strategy, namely the great particularity, peculiarity, and local circumstances, escape these abstractions and scientific systems.⁴¹

Thus, unlike Guibert or, more to the point, Jomini, Clausewitz desisted from producing an architecture of war, rather, he made allowance for chance, diversity, and the unknown by positing laws ("the broadest concept applicable"), principles, and rules, which serve to enable, in his words, "an analytical investigation leading to a close acquaintanceship with the subject [of war]. . . *The closer it comes to that goal, the more it proceeds from the objective form of a science to the subjective form of a skill* . . ."⁴² Note how Clausewitz, with consummate care, deftly navigated through the dogmatic grounds occupied by his predecessors. To appreciate Clausewitz's theoretical dexterity and the impact it had on his project as a whole, it is necessary to take a step back and briefly remind ourselves of the influence that the philosophies of the Romantic Age had on the evolution and development of military theory and the study of war.

Perhaps an adequate and pertinent summation of the mood of the Romantic philosophy at the time may be found in Victor Hugo's proclamation, "[a]ll systems are false; only genius is true."⁴³ It will be recalled that one of the most critical factors that distinguished the Romantics from their predecessors was the former's resistance to the

rational tidiness of the Enlightenment . . . a rational world that could be examined, understood, and controlled by Reason . . . [wherein] . . . [t]he methods and principles of natural science were to be applied to a whole range of human experience, including the moral universe, to reveal the rational simplicity of reality.⁴⁴

In this way, Romantic philosophy, in general, eschewed the strict bounds of the rational and was more concerned with the non-rational. It will also be recalled that Kant – "a consummation of the Enlightenment . . . [and] . . . as a wellspring of German Idealism"⁴⁵ – while working to position Reason as the highest tribunal, also made room for what he called the antinomy.⁴⁶ This was nothing less than a tacit acknowledgment, by Kant, that even when viewed from within the prism of pure reason, there were some things that Reason itself could not address. Among other things, this also allowed for a refocusing on the possibility of Chance which, till then, was, as Lynn puts it, "a threat to the predictable and the regular . . . [It] now became a major factor, an unavoidable and accepted determinant."⁴⁷

Not surprisingly, Clausewitz followed a similar trajectory. As we have seen, having first critiqued what he considered to be the straitjacketed approach of his predecessors to the study of war, Clausewitz began to develop a more flexible

approach – an architectonic – in which allowances could be made not only for all that lay within, but also, potentially, for that which lay beyond the reach of Reason. In this way, Clausewitz attempted to account for – to take stock of – probabilities, chance, and the unexpected. What is novel about Clausewitz is the tack that he took to address this problematic and it is, quite justifiably, one of the lasting legacies that he has left to the study of war.

(de)Constructing war, absolute and real . . .

Clausewitz defined war as “an act of force to compel our enemy to do our will.”⁴⁸ Noting in passing the striking similarity between this definition and Vattel’s view on the object of war which, as we have seen, was to do whatever is necessary to bring an opponent to Reason,⁴⁹ we find that Clausewitz was also careful to base his definition on “hostile intentions,” which he qualified in the following manner:

Two different motives make men fight one another: *hostile feeling* and *hostile intentions* . . . Even the most savage, most instinctive, passion of hatred cannot be conceived as existing without hostile intent . . . it is the most universal element . . . [I]t would be an obvious fallacy to imagine war between civilized peoples as resulting merely from a rational act on the part of . . . governments and to conceive of war as gradually ridding itself of passion . . . That would be a kind of war by algebra.⁵⁰

Clausewitz then drew three conclusions from this. First, he identified two primary aspects of war – Absolute War and Real War; second, he concluded that “the original motive” for war resided in its “political object”; and third, he concluded – “no other human activity is so continuously or universally bound up with chance.”⁵¹ These conclusions enabled Clausewitz to propose what has since become famous as the paradoxical trinity of war. In his words:

War is more than a true chameleon that slightly adapts its characteristics to the given case. As a total phenomenon its dominant tendencies always make war a paradoxical trinity – composed of primordial violence, hatred, and enmity, which are to be regarded as a blind natural force; of the play of chance and probability within which the creative spirit is free to roam; and of its element of subordination, *as an instrument of policy, which makes it subject to reason alone*.⁵²

Thus, if we could speak of the “components” of war then, based on the aforementioned, they would be (1) a blind natural force, and (2) the (inter)play of chance and probability.⁵³ The third element was not strictly a component of war – it was an indication, albeit a critical one, of war’s potentiality to be instrumentalized. Thus, when Clausewitz mentions that the motive of war lies in its political object, we should be careful to recognize that he is not referring to war as an originary condition or phenomenon; rather, he is pointing to the domain within which the phenomenon of war

is most likely to be triggered and actualized. For Clausewitz, therefore, in ordinary terms, war's principal components were only two in number – blind natural force and the play of chance.

Recall that Clausewitz's stated objective was to devise a "methodical procedure . . . to meet the most probable cases . . . based on the average probability of analogous cases. Its aim . . . to postulate an average truth." The critical move that Clausewitz made in this context was to insert an a priori distinction within the concept of war in terms of Absolute and Real War, and by identifying the limit of Reason in the context of Absolute War. Thus, early in *On War*, he presented the "essence of war . . . as an eruption of force and violence,"⁵⁴ which he understood as "true war or *absolute war*."⁵⁵ For Clausewitz, this true war, or Absolute War, was nothing but "a struggle for life and death – a struggle, that is, in which at least one of the parties is determined to gain a decision."⁵⁶ The implicit annihilation that awaited the participants of Absolute War – going by its logic of strikes and counter-strikes – was a fact that was not underestimated by Clausewitz. Indeed, he frequently cites the example of the campaigns of Napoleon as being a proximal condition of Absolute War in Real terms. As a point of passing interest we should bear in mind that some scholars, particularly Gat, suggest that Clausewitz's later writings indicate that it was on this very point that "Clausewitz's view of the nature of war as all-out fighting, centering on the engagement, fell into crisis."⁵⁷ For our purposes, however, we only need take note of the following:

1. Clausewitz's analysis of the theories of his predecessors – informed by a close examination of military history – suggested to him that "the universally valid element" of the conduct of war was "saturated by the urge for a decision," which necessarily implied the absoluteness of violence – though he did accept that "[t]he age in which this postulate . . . was at its strongest was the most recent one,"⁵⁸ that is to say, the age preceding his.⁵⁹ Clausewitz insisted that Absolute War is an expression of the logical necessity to overthrow the enemy; it is the succession of blows and counter-blows struck with almost equal energy.⁶⁰ In other words, Absolute War, presuming no external influence, was the maximum effort, applied repeatedly, at a decisive point, for a decisive decision, with a single logical object: Absolute defeat of an enemy. This logic, was in Clausewitz's words, war's "*natural tendency . . . in its philosophical and strict logical sense alone and does not refer to the tendencies of the forces . . . including . . . the morale and emotions of the combatants*."⁶¹ Clausewitz further asserted that this logic remained true regardless of whether war was a duel between two contestants, or a hostile engagement between coalitions of nations. Based on the aforementioned, therefore, it could then be said that Absolute War displays two characteristics: (1) by virtue of being, at the least, co-constituted by blind natural force, it is, to some measure, independent of "the political" because as a pure expression of blind natural force, the "succession of blows and counter-blow" need have no basis in "the political," and (2) when this blind natural force did manifest itself within "the political," it could potentially "usurp the place of policy the moment policy had brought it into

being; it would then drive policy out of office and *rule by the laws of its own nature*.⁶² We need to be careful here. Clausewitz insists that “in the field of abstract thought . . . it [i.e., war] reaches the extreme, for here it is dealing with an extreme: *a clash of forces freely operating and obedient to no law but their own . . . an almost invisible sequence of logical subtleties*.”⁶³ Clausewitz insists that the logic of Absolute War that determines the “succession of blows and counter-blows” is not simply an inhuman logic, but also a non-human one. Thus, we would do well to resist the temptation of overlaying this non-human logic with peculiarly anthropocentric hues. It is equally critical that we recognize Clausewitz’s subtle, but simultaneous, assignment of two versions of Absolute war— as the logic of war independent of the political *and* as the logic of war at the disposal/service of the political. But Clausewitz’s initial assessment of the dangers posed by Absolute War regardless of it being subject to the political or not remained unchanged. He contended that the logic of war – in the Absolute sense – devoid of emotion, morale, and feelings – was marked by *its desire* for the annihilation/absolute defeat of the enemy and thus was dangerous and destructive.⁶⁴ Indeed, he also added the corollary that like in its true state, this logic – even when manifested within the political – was equally (more to the point, materially) destructive and, therefore, dangerous – as, Clausewitz claimed, it was in the hands of Napoleon.⁶⁵ Thus, it is not surprising that Clausewitz insisted that any theory of war *must* make room for Absolute War. Indeed, according to Clausewitz, Absolute War *must* be the principle that is invoked to

form a general point of reference, so that he who wants to learn from theory becomes accustomed to keeping that in view constantly, to measuring all his hopes and fears by it, and to approximating it *when he can* or *when he must*.⁶⁶

It is important, at the risk of repeating ourselves, to emphasize that the principle of Absolute War, for Clausewitz, lay in its logic and not in its instrumentality. The latter – as in the case of Napoleon, Caesar, and Alexander – was a mere instance of the Absolute principle in operation in the expanse of history and in the space and service of “the political.”

2. Clausewitz’s historical research also showed him that though this “logic of war” may be a “universal element” and, in this sense, “the rule,” the history of warfare in every age and country, paradoxically, showed that the majority of wars/campaigns did not even approximate the universal element, thereby making it seem more of an exception than the rule.⁶⁷ Gat suggests that this discovery posed a dilemma for Clausewitz and that, as a consequence, Clausewitz found his “lifelong conception of theory” being shattered.⁶⁸ Contrarily, this study suggests that the issue at stake is not whether Clausewitz’s *concept* of war (Absolute War, which we have discussed in terms of the logic of war within *and* without a political context) failed to pass the test of experience. Nor is it the case that “the unity of the phenomenon of war, based on a lasting spirit

that encompassed the diversity of forms, disintegrated; and the practical imperatives derived from this spirit – the significant content of theory – lost their validity.”⁶⁹ It is simply that Clausewitz deduced – based on the evidence of his historical research – that the logic of war that he identified as Absolute War was incomplete. It needed to address, by including within its ambit the element of possibilities, probabilities, chance, and uncertainties to be fully workable. Clausewitz’s historical researches also showed that in this expanded form a theory of war could indeed be devised that could conceivably accommodate the rich, wide, and varying particularities of history.⁷⁰

3. Lastly, but most tantalizingly, Clausewitz fleetingly refers to “the pure concept of war.”⁷¹ It will be recollected that, for Clausewitz, the dual forces that tempered the Absolute logic of war were, on the one hand, Reason (in the form of the political) and, on the other, the interplay of possibilities, probabilities, of good and bad luck, and of instances in which strict logical reasoning often plays no part at all. These latter forces, Clausewitz reminded us, “[were] always apt to be a most unsuitable and awkward intellectual tool.”⁷² Now, an overwhelming number of scholars and theorists view the interplay of possibilities and probabilities, collectively “chance and uncertainty,” as a qualification, albeit an important one, of Absolute War – a qualification that allows for the phenomenon of Absolute War to be experienced as Real War. This is not surprising as such a qualified understanding of chance and uncertainty is also textually supported in *On War*. Thus, for instance, we find Clausewitz musing about the following:

Why is it that the theoretical is not fulfilled in practice? The barrier in question is the vast array of factors, forces and conditions in national affairs that are affected by war . . . Logic comes to a stop in this labyrinth . . . This inconsistency . . . is the reason why war turns into something quite different from what it should be according to its concept . . . turns into something incoherent and incomplete.⁷³

Here, quite obviously, Clausewitz is qualifying, that is to say, he is marking out a distance between Absolute War and Real War – between the theory and practice (of war) – and points to a non-conducting medium, in which “[n]o logical sequence could progress . . . as it were a simple thread that linked two deductions.”⁷⁴ But it is also interesting to note that he is simultaneously pointing to another condition – a condition referred to by Clausewitz as “the pure concept of war” which he, by what can be described as a sleight of hand, conflated with principle of Absolute War. Clausewitz says:

the natural aim of military operations is the enemy’s overthrow, and that *strict adherence to the logic of the concept can, in the last analysis, admit no other . . . we showed how factors inherent in the war-machine itself can interrupt and modify the principle of enmity as embodied in its agent, man, and in all that goes to make up warfare*. Still, that process of modification is by no means

adequate to span the gap between *the pure concept of war* and the concrete form that, as a general rule, war assumes . . . *Generally it is not a case in which two mutually destructive elements collide, but one of tension between two elements, separate for the time being, which discharge energy in discontinuous, minor shocks.*⁷⁵

As we have seen, and as Clausewitz reiterates here, the logic of Absolute War is all-encompassing for it allows no other. The logic of Absolute War dictates that two elements will collide in a mutually destructive manner from which there is no possibility of escape. The outcome of the progress of such a logic will, therefore, be either the annihilation of any one party or (particularly in the nuclear age) the mutual destruction of both participants. While it may not be possible for us (humans) to identify or assign a meaning to the logic operative in such a condition, it can however be rationally calculated. This remains the case even if we take into account the myriad of instances where chance and uncertainty make their presence felt as the fog and friction of (absolute) war generated within and experienced by the war machine. In the context of the concrete form of Real War, the play of chance and uncertainty is even more pronounced, though the pronouncement is more in the form of additional complexities that are factored into war and its conduct. Clausewitz also notes that the process of modification, that is to say, the factors – collectively, chance, and uncertainty – that temper the logic of Absolute War and which apply to the more concrete form of Real War do not span the gap between these two “faces” of war. Note that Clausewitz here – operating within a Kantian regime of Reason – is not suggesting that Absolute War or Real War is incomprehensible or incoherent. But he does say that the gap between the theory and practice of war is incomprehensible and incoherent – a condition in which logic (and one could add Reason) comes to an end. Note also that this condition is in excess of not simply Real War, but also of Absolute War. This study contends that this excessive condition – that which stands in stark contrast to both Absolute and Real War – is the concept of the pure concept of war that Clausewitz fleetingly refers to. It is further suggested that Clausewitz was fully cognizant with the force of this concept and, recognizing its potency, was forced to constrain it to as far an extent as possible. It is important to reemphasize that this space occupied by the pure concept of war is one of absolute incomprehension by Man. From Clausewitz’s point of view, this situation would have been untenable. Thus, he insisted on conflating this pure concept of war with Absolute War and then tempering the theory of Absolute War by being “prepared to develop our concept of war . . . by leaving room for every sort of extraneous matter.”⁷⁶ Indeed, for Clausewitz, the critical series by which he developed his architectonic of war was nothing less than Pure War < > Absolute War < > Real War. Pure war is tempered by the affixation of a logic (which under some circumstances may be comprehensible, but not always necessarily so), which yields the phenomenon of Absolute War. To Absolute War, a number of orders of chance and uncertainty are added – such as the fog and friction of war, “natural inertia . . . the friction of its parts, all the inconsistency, imprecision, and timidity of man; and finally the fact that war and its forms result from ideas, emotions, and

conditions prevailing at the time"⁷⁷ – that may be theoretically calculable, but practically very difficult to compute. This is the phenomenon of Real War. As we will see, however, the matter does not simply end there because, for Clausewitz, Chance (*in extremis*, as the anterior condition to Reason) also represented the possibility of Reason extending its dominion over that absolute Other of Reason. When considered in this way, Clausewitz's introduction of Chance in the context of his theory of war was a move that ultimately served to "bring war to Reason."

On the question as to why Clausewitz adopted this stance, the answers are many and some are quite obvious. Thus, for example, the intention to bind war within an architectonic of Reason was one of Clausewitz's stated objectives. It could also be the case that Clausewitz recognized that the phenomenon of war was something that, while being apparently recognized and subject to critical analysis in political terms, was actually in excess of such circumscriptions. Thus, perhaps, his insistence on taking into account the concept of Absolute War (informed by the pure concept of war) within any consideration of war-as-such. Certainly, Clausewitz's exposure to the philosophies of the Enlightenment would have imparted to him a confidence in the prospect of ultimately understanding the mysteries of nature. In equal measure, Clausewitz's exposure to the Romantic philosophies of his time would have taught him to have a healthy respect for the "unknown unknowns." Regardless, however, when viewed in the context of the strategic object of Clausewitz's theorizing efforts, it is important for us to note that the recognition and introduction of Chance was nothing less than an enabling – co-constituting – principle that allowed him to design a viable architectonic of war.

Recall that originally, for Clausewitz, Absolute War exhibits a logic bereft of any emotions, feeling, and morale – regardless of whether this logic is expressed within or without the political. If it was indeed the case that Clausewitz took the aforementioned view of Chance, that is to say, he recognized Chance as the anterior condition to Reason, then his fleeting reference to the pure concept of war remains in excess of Absolute War in both its senses – as the logic of war and/or its destructive operation/manifestation in the political context. This study suggests that for Clausewitz, the pure concept of war was this excess that was anterior to Absolute and Real War. This concept of war, in its originary purity, is spectral but Real. It eludes our efforts to grasp it; nevertheless, it leaves its empirical traces in the form of chance and uncertainty.⁷⁸

But when considered in the context of a theory-building exercise, as Clausewitz himself observed, this pure concept of war (even in its modified form of Absolute War) was an unreliable tool. Thus, in theoretical and operational terms, Clausewitz used "chance and uncertainty" as an instrument – like "the political" – to temper and reign in the incoherence of the pure concept of war by making it Real as Absolute War, which in turn was made material as Real War.⁷⁹ This Clausewitzian gesture speaks volumes for by it he not only obviated the need to ignore chance and uncertainty which, going by his own arguments, could only be ignored at one's peril, but he also revealed much about the pure concept of war which proved to be

ungraspable in the Real despite the empirical traces left by it. In this way, as we can see, all along, at a subtle philosophical level, the central problem that Clausewitz was confronting, and proactively working to address, which was nothing less than how to think when thinking is chaotic at its core?

Put in this way, it is easy to understand why Clausewitz may have struggled with the idea. It is obvious that implicit in the Clausewitz's pure concept of war there is an apparently unbearable tension. Then again, it should also be appreciated that Clausewitz – in keeping with his times – was also fairly confident of Reason's ability to extend its reach by conquering Chance and subordinating it to Itself.⁸⁰ Indeed, after the publication and acceptance of Kant's *First Critique*, Reason had subordinated itself to the highest tribunal – Itself. But while doing so, it also had to acknowledge its own limits. Kant says in the Preface to *The Critique of Pure Reason*:

Human reason has a peculiar fate in one kind of its cognitions: it is troubled by questions that it cannot dismiss, because they are posed to it by the nature of reason itself, but that it cannot answer, because they surpass human reason's every ability.⁸¹

The question regarding Chance was one potent example of Reason confronting that which surpassed human reason's every ability. But this did not mean that Reason did not either resist or even proactively combat its Other. Thus equipped, Clausewitz began his tentative attempt to bridge the gap between the a priori concept of war – that is to say the pure concept of war disguised as Absolute War – and the experience of Real War.⁸² As we will see, this “hope,” in Hacking's words, to “tame chance” assumed an even more real presence with the advent of the Age of Information.

However plausible and delicate this argument may seem, we should not be too hasty in accepting Clausewitz's view that the pure concept of war was totally beyond Reason and thus only needed an architectonic fashioned in part by the political and Chance. A careful second look at this analysis already points to a partial tempering of the phenomenon of war that was always/already at work in Clausewitz's theoretical efforts. Indeed, this “tempering” is visible in the logic of Absolute War. Note that Clausewitz persistently describes the logic of war as being mutually destructive for the combatants involved in it. *Even if we disregard, as Clausewitz does, the elements of morale, feelings and emotions in the context of Absolute War, it is impossible to ignore the thanatological consequences that accompany the logic of war.* This is true not simply in the case of Real War, but is also implicit in the logic of Absolute War and in the pure concept of war. Thus, for Clausewitz, war had always-already been subjected to, if not Reason per se, then at least to a thanatological ordering. This, in a very material sense, marked the circle that circumscribed his *concept* of war – pure or otherwise. In this way, this study suggests, the Limit-Condition of the *concept* of war, for Clausewitz, was thanatologically (pre)determined. Clausewitz's pure concept of war, it would seem, was not all that “pure” after all.

The Clausewitzian mesh and net, architectonically speaking . . .

While we will return to the above discussion in short order, for our immediate purposes, however, we should not fail to acknowledge the deftness with which Clausewitz conducted the discussion on the distinction between Absolute War, Real War, and this pure concept of War. This is reminiscent of the maneuver by which Kant had "linked the theoretical problem of the *a priori* to spontaneity and freedom, and through them to practical philosophy."⁸³ Also like Kant, Clausewitz sought to ground the pure concept of war in an architectonic such that, as an *a priori* principle/rule, it would (1) legitimize not only the formalization of an architectonic of war, but also, (2) canonize how the architectonic was designed thereby, ultimately, bringing war to Reason.⁸⁴ Clausewitz's sketching out of an architectonic of war, thus, was nothing less than an attempt to tame a phenomenon that – to him – was in excess of the scientific laws of Reason, and which was inextricably laced with blind natural force and chance. The development of an architectonic, Clausewitz realized, was the only way by which he could effect the maneuver that Kant had exercised when the latter had discussed Religion within the Limits of Reason. It is, therefore, important for us to recognize that Clausewitz's grand/meta strategic objective in the conceptualization and writing of *On War* was nothing less than to "discuss War within the Limits of Reason." This was the mesh and the net that Clausewitz cast over the phenomenon of war.

Clausewitz adopted two simultaneous and co-existent strategies to effect this maneuver. First, he subordinated war to politics, and second, he made space for the Genius as Commander which, this study suggests, was Clausewitz's way of instrumentalizing Chance, thereby making it into a handmaiden of the Genius and ultimately to the phenomenon of war. As we have already seen, there were very good reasons for Clausewitz to effect this maneuver. It is indeed a telling commentary on the conceptual power and force of Clausewitz's philosophy of war that today when we speak of the Clausewitzian theory of war, or more commonly, of war-as-such, we tend to ignore – rather, we presume – these *a priori* elements within the *concept* of war operative in Clausewitz's work. Thus, we remain content to problematize war within the architectonic – the theoretical, indeed ontological, mesh and net – erected by Clausewitz and underwritten by a very Kantian understanding of Reason posited as an *a priori* concept/principle.

Clausewitz set the strategic priority of his intellectual exercise by stating that his task "[was] to develop a theory that maintains a balance between . . . three tendencies, like an object suspended between three magnets."⁸⁵ These three tendencies, of course, are the famed trinity of war – blind force, chance, and the subordination of war to policy/politics. As we have already seen, two elements of this trinity, namely, blind force and chance, were ruled out by Clausewitz as being controllable. Thus, Clausewitz had to devise another method that would give substance to his efforts to devise an appropriate theory of war. This he undertook to achieve by reemphasizing the elevated location and role of politics (this geared to temper the element of blind natural force) and by positing the role and function of the Genius as Commander (this geared to contend with the vagaries of chance and uncertainty).

Handel echoes the majority of Clausewitzian scholars when he suggests that "Clausewitz's greatest contribution to the study of war—his Copernican revolution, so to speak—was his emphasis on the centrality of politics in war."⁸⁶ Further, Handel observes:

Clausewitz demonstrated that war *makes sense* only as an extension of the logic of political action. *War divorced from political life is pointless*, for ideally, *politics pursues a rational goal* by enhancing the welfare and interests of the state. This [Handel claims] is the axiomatic foundation of his [Clausewitz's] theory of war [which] as straightforward as the idea of the primacy of politics in war is, it is also the most difficult to accept and implement in time of war.⁸⁷

Yet, as we have seen, Clausewitz did not begin from the premise of war being subject to politics. Contrarily, the ideal—the "pure" form of war in the abstract—had, for Clausewitz, very little to do with rational goals and the logic of political action. Though, as we have seen, it did not entirely escape the thanatological considerations implicit in Reason itself. We have also seen how this prospect brought Clausewitz to the very edge of Reason—a situation similar to that which Kant had to contend with when Reason confronted an antimony, namely, the problem of Religion. The canon represented by the aforementioned words of Handel—by way of an example—does not read Clausewitz in this way. This inversion of Clausewitz's dilemma tragically trivializes a core problematic that Clausewitz (indeed any philosopher of war) had to (and has to) contend with—something that Hermann Kahn, in an apparently unrelated context, over a hundred years later, curiously phrased as "thinking about the unthinkable."⁸⁸ It will be obvious by now that this study neither presumes such a reading of Clausewitz—nor does it endorse such a trivialization of Clausewitz's theoretical efforts.

Clausewitz's first intellectual problem, thus, may be encapsulated in his efforts to contend with the non-human logic of Absolute War. In other words, though Clausewitz could discern a pattern in the machinations—that is to say, in the logic—of Absolute War, it also brought home to him—operating from within the Kantian regime of Reason—the very potent realness of the limits of Reason. After all, let us not forget that Absolute War was nothing more than a theoretically manageable guide to the incoherence of the pure concept of war. Under these circumstances, Clausewitz, quite naturally, would have found it increasingly difficult to theorize on war for, in philosophical terms, he would have had reached the maximal limits of Reason. Thus he was led to insist that no theorization of war could afford to ignore Absolute War as "a general point of reference."⁸⁹ Among other things, this may also be offered as evidence of Clausewitz's (perhaps tacit) recognition that perhaps "war in its most extravagant, uninhibited and originary sense does not serve the State."⁹⁰ Recognizing the excess of the phenomenon of war—this not being necessarily limited to the wantonness of the violence that war entails—Clausewitz found, in Handel's words, "the logic of political action" as being a suitable but tenuous framework—in Heideggerian terms, a *gestell*—within which war

could and would be contained.⁹¹ Thus, it is suggested, Clausewitz's positing of the rational order of politics was merely a guise by which he attempted to secure war within the realm of Reason. Of course, Clausewitz was astute enough to recognize that this *gestell* was a flimsy one – as Napoleon had demonstrated. Nevertheless, he insisted on this *ge-stelling* because – from his perspective, as Handel, among others, points out – it was the only way by which war could even be made sense of. Moreover, it also contributed to his strategic intention – that of creating an architectonic which would enable a *reasonable* theorization of the problematic of war. It is in this sense that this study suggests that there is a very real possibility that Clausewitz may have been more than aware that – in ordinary terms – war was not an extension of policy, rather, as Foucault was to theorize over a century and half later, that policy was an extension of war by other means.⁹²

The second strategic objective of Clausewitz's theoretical effort was to contend with chance and uncertainty, which was even more problematic than the non-human logic of Absolute War. As we have seen, to all intents and purposes, and even reiterated a number of times by Clausewitz himself, the non-human logic of war is an abstraction – a referential point – which, in the context of Real War, is unlikely to come to pass, though Clausewitz claimed to see – quite intimately – the very real possibility of Absolute War manifesting itself – that is, becoming Real – in the hands of Napoleon. Thus, just as it would have seemed to Clausewitz that he had succeeded in securing war within the confines of Reason, another factor came to the fore. This time, however, the problem was subversive in nature and origin for it represented an internal or intensive quake within Reason itself. This was the problem of Chance and Uncertainty. It is important for us to recognize that this problem was altogether a different matter as compared to the blind logic of the natural forces that, according to Clausewitz, co-constituted war and which he had quite dexterously succeeded in containing within the *gestell* of the rational order of politics. It would not have taken Clausewitz long to realize that Chance and Uncertainty were even more problematic than the blind forces of nature for, unlike the latter, the former intruded like unwelcome guests into the *gestell* of not simply the rational order of politics, but also within Reason itself. If Clausewitz is revered today as a pre-eminent philosopher of war, it is primarily because of his efforts in contending with Chance and Uncertainty, which he theorized in terms of fog and friction in war. This acknowledgment of Clausewitz's insight is, to a great extent, warranted and justified.

As we have seen, the most common readings of Clausewitz's work, particularly, his *On War*, have tended to lessen – by inverting – the impact that Clausewitz may have intended to impart with his theorizations of Absolute War. In the case of Chance and Uncertainty, the literature – with a few exceptions – has simply tended to reiterate that these twin phenomena are very critical elements in war and its conduct. But this is simply not enough. There is more to this problem than what a mere glance would suggest. Thus, to put it in very rudimentary terms, the problem posed by chance and uncertainty is the presence of chance and uncertainty in itself. Recall in this context the manner in which Deleuze attempted to speak about absolute immanence. He said:

Absolute immanence is in itself: it is not in something, *to* something; it does not depend on an object or belong to a subject. [. . .] When the subject or the object falling outside the plane of immanence is taken as a universal subject or as any object to which immanence is attributed, [. . .] immanence is distorted, for it then finds itself enclosed in the transcendent.⁹³

This study contends that Clausewitz, in the form of chance and uncertainty, thus encountered an instance of what Deleuze would refer to as absolute immanence – though it is unlikely that Clausewitz would have recognized it as such. In this sense, Clausewitz faced nothing less than ontological problem. In the context of this study, it is hoped that a closer examination of how (and to a lesser extent, why) Clausewitz came to address the question regarding chance and uncertainty will not only help us to recognize the enormity and scale of the Clausewitzian project, it will also assist us to confront the single most challenging aspect of any philosophy of war.

In Fortuna's camp

No other human activity is so continuously or universally bound up with chance. And through the element of chance, guesswork and luck come to play a great part in war . . . War is the realm of uncertainty; three quarters of the factors on which action in war is based are wrapped in a fog of greater or lesser uncertainty . . . war is a gamble . . . war resembles a game of cards.⁹⁴

With these lines, Clausewitz opened his campaign against Chance and Uncertainty and the impact of his efforts remain with us till today. Let us, however, begin by first reviewing the immediate context in which Clausewitz came to confront these twin disruptive phenomena. Herbig informs us that:

Clausewitz looks at how chance affects planning, implementing, and the very thinking of wars; at what qualities commanders must have to surmount chance and uncertainty; at how chance shapes interactions between adversaries. He mulls over uncertainty's sources and its distortion of the environment. He focuses on chance in his theories of the nature of war . . . considering how the realities of chance affect the possibility of arriving at a theory.⁹⁵

While this serves as an adequate summation of Clausewitz's concerns regarding Chance and Uncertainty, Herbig, quite correctly, also informs us that in his *magnum opus*, Clausewitz addresses these issues in a somewhat haphazard manner. Thus Herbig, referring to Chance, notes, "[t]hese questions arise here and there in *On War*. Sometimes Clausewitz separates chance and uncertainty, sometimes he confounds them, and he often imbeds them in the context of other issues."⁹⁶ Herbig then, helpfully, suggests:

There are four clusters of ideas which . . . are just loosely structured enough to allow us to draw more informed inferences . . . on the nature of war, on the personal qualities and ideas of the commander, on the relationship of chance and uncertainty, and on the options for action in the face of these contingencies.⁹⁷

Herbig's classificatory scheme, though helpful in its own right, does not however further our project to (1) investigate the singular problem of chance and uncertainty as confronted by Clausewitz and, more importantly, (2) of appreciating precisely how and to what end Clausewitz sought to ameliorate the perceived effects of Chance and Uncertainty. To be sure, Herbig does mention Clausewitz's theorization on the nature and role of the Commander in the context of Chance and Uncertainty, but her investigation is not sustained and certainly does not address (1) precisely why Clausewitz chose to emphasize the role of the Commander in the context of these twin disruptive phenomena and (2) the consequence of the Clausewitzian understanding of the Genius as Commander. Herbig does, however, temptingly suggest that "to advance the theory of warfare one must grasp the effects of chance on the commander . . . [and] . . . in how well each commander could apply the ideas – not specific solutions – in *On War* to his own unique problems."⁹⁸ For our purposes, however, this does not suffice, for here – like in the case of the political – Clausewitz effects a tactical maneuver which, while geared to address the question of chance and uncertainty in operational terms, also marks a turn to the instrumentalization of Chance and of that utterly Romantic figure of the Genius. Previously we noted that Clausewitz, in keeping with the intellectual developments of his time, would have very likely considered Chance as the Absolute Other of Reason. This, we asserted, was the case because, as a philosopher of war inspired by Kant, Clausewitz would have been well-placed to recognize Chance as being a Limit-Condition of Reason. It is therefore necessary for us to now take a closer look at precisely how Clausewitz deftly wove this Limit-Condition – "the play of chance and probability within which the creative spirit is free to roam" – into his account of war.

Given that we will be investing a fair amount of space to address this particular element of Clausewitz's theory of war, it may help to clarify at this stage the immediate and tactical reasons as to why this investment in time and effort is being made.

- I. First, having heard the din of battle himself, it would probably be safe to presume that Clausewitz had a firsthand acquaintanceship with the vagaries posed by chance and uncertainty in war,⁹⁹ which may have also led him to so emphatically state that war, unlike any other human activity, is continuously or universally bound up with chance. This Clausewitzian observation is also borne out by the literature on the history of war and its conduct which, when discussing war in its theoretical/philosophical and operational aspects, seems to accord an inordinately high level of emphasis on chance and uncertainty. Thus we find the pages of military history containing an overwhelming number of direct – and sometimes oblique – references to chance and uncertainty, and how they impact war and its conduct. Indeed, these references not only appear

in accounts of information/net-centric warfare and even before in those of mechanized warfare, but also in those that detail the regimented set-piece battles of the Enlightenment Era and earlier. At the meta-strategic level too, as the literature suggests, chance and uncertainty make their very potent presence felt.¹⁰⁰ Further, the literature also points to how chance and uncertainty take on a very material – that is to say, thanatological – existence in the specific contexts of small/micro combat units, and at the level of the individual soldier.¹⁰¹ This, in itself, warrants a closer look at chance and uncertainty in the martial, particularly Clausewitzian, context.

2. Second, Clausewitz's attempt to address chance and uncertainty, being more flexible than that of his predecessors and counterparts, remains the theoretical model of choice when discussing the fog and friction of war today. As we will see – when we take up the case of NCW – the exercise of this choice in the context of war in the Information Age continues to approximate the Clausewitzian model and for good reason. For us, therefore, to appreciate how the strategy and logic of NCW is geared to combat and quell (the latter being the ideal condition) the vagaries of chance and uncertainty, it is necessary to take a keener look at how and under what conditions the phenomena of chance and uncertainty – which Clausewitz discussed under the rubric of fog and *friktion* – evolved and interrupted the rational calculations of military theorists of the time.
3. Third, the tendency to control (and in the more extreme cases, overcome) chance and uncertainty in the martial context – as we have alluded to earlier – is nothing less than an attempt to accommodate chance and uncertainty within an architectonic of war, rather than having the architectonic being interrupted by them. It is only with Clausewitz – though military theorists before him had indeed considered chance and uncertainty and had noted the (more often than not) deleterious effects that they had not only in the conduct of war, but on their attempts to devise a comprehensive theory of war as well – that such a proactive stance towards these disruptive phenomena was taken. As mentioned earlier, Clausewitz presumed to identify opportunities that could be exploited in the context of chance – though, it must be restated, he did place the figure of the Genius as the identifier and exploiter of the opportunities that chance and uncertainty afforded. This marks the most critical maneuver effected by Clausewitz to sketch out his architectonic of war. Being, as this study contends, a pivotal theoretical effort by Clausewitz in his work, *On War*, a closer look at how this maneuver was effected and the ramifications that it has had is warranted.

It is also necessary to briefly direct our attention to the environment which provided the intellectual and philosophical context in which Clausewitz embarked on this project. Hacking informs us that:

Throughout the Age of Reason, chance had been called the superstition of the vulgar. Chance, superstition, vulgarity, unreason were of one piece. The

rational man, averting his eyes from such things, could cover chaos with a veil of inexorable laws. The world, it was said, might often look haphazard, but only because we do not know the inevitable workings of its inner springs.¹⁰²

Not only was the Age of Religion drawing to a close, but there was a rejuvenation in the intellectual spirit of those times wherein the world, that is to say Nature, was being increasingly considered as being the playground of Man who, in turn, was nothing less than the embodiment of not simply Practical Reason, but also, of Pure Reason. Our overview of classical military theory bears this out. As we have seen, it certainly was not the case that the classical theorists of war did not recognize and/or accept the presence of chance and uncertainty in war. They did.¹⁰³ The point to note, however, is the economy of relations that marked the relationship between these theorists and chance and uncertainty in the context of war. The premise of this relationship was marked by an increasingly widespread optimism that was common enough in the Age of Reason – particularly in its more deterministic modes. Essentially, this optimism was based on the notion that though “[t]he world . . . might often look haphazard, but [this is] only because we do not know the inevitable workings of its inner springs.”¹⁰⁴ In other words, while recognizing the tactical messes that chance and uncertainty could and did create in war, strategically, the problem of chance and uncertainty – for the classical theorists – was not a major issue. For them, it was only a matter of time before even chance and uncertainty could be “tamed.” It all depended on when and in what manner the inevitable workings of the inner springs of the world stood revealed. At this point, one can almost imagine Heidegger nodding in approval for, when put in this manner, it was nothing less than a movement, which Heidegger would, no doubt, point to as an example of an ontic (re)presentation of an ontological activity – an activity by which Nature would stand unconcealed, and thus be brought forth. In ontical terms, of course, Man (the Human) effects this maneuver for it is he who will eventually command Nature having understood her inevitable workings.

In the context of our brief overview of the classical theorists of war, this finds expression in the increasingly detailed models/theories of war and its conduct that attempted to account for the phenomenon of war and of its conduct. It will be recalled that Puysegur, displaying the *esprit geometrique*, proposed, in the form of a treatise on siegecraft and fortifications, a universal theory of war that would be scientific. Then Maizeroy, informed by Pythagorean philosophy, which held that numbers underlay all phenomena, focused on tactics – his attempt being to fashion a perfect system of tactics, by means of deploying what he termed “the most sublime faculty of mind . . . reason.” These theorists were then followed by, among others, Guibert, whom it is worth quoting again:

Almost all sciences have certain or fixed elements, which succeeding ages have only extended and developed, but the tactics, till now wavering and uncertain, confined to time, arms, customs, all the physical and moral qualities of a people, have of course been obliged to vary without end and for a space of a century to leave behind nothing else than principles disavowed

and unpracticed, which have ever been cancelled and destroyed by the following age.¹⁰⁵

What Guibert wanted was nothing less than, “those huge machines, which by quite uncomplicated means produce great effects.”¹⁰⁶ For Guibert, therefore, a bit ominously, the ideal martial condition would be one where life and all the myriad of moments that comprise it were deployed to sustain “huge machines” – systems where “there is not a single moment of life from which one cannot extract forces, providing one knows how to differentiate it and combine it with others.”¹⁰⁷

Lastly, the hope of military theorists such as Lloyd and von Bulow was to find a set of “rational principles based on hard, quantifiable data that might reduce the conduct of war to a branch of the natural sciences . . . from which the play of chance and uncertainty” could be entirely eliminated.¹⁰⁸ Though we have not considered the contribution of Lloyd to the study of war in any great detail, we should note that he had gained some name and fame by critiquing Frederick II as a strategist based on his purported application of scientific principles to the historical events of the Seven Years’ War (1756–63). Thus, as Watts puts it:

[F]oreshadowing the mathematical approach that would later be pursued by the English automotive engineer Frederick W. Lanchester, Lloyd’s enthusiasm for achieving certainty in war led him to argue that whoever understands the relevant military data stemming from things like topological and geographical measurements, march tables, supply needs, and the geometrical relationship of supply lines to fighting fronts (or of armies to their bases) would be “in a position to initiate military operations with mathematical precision and to keep on waging war without ever being under the necessity of striking a blow.”¹⁰⁹

Along with him, as we have seen, von Bulow, in his “Pure and Applied Strategy” (*Reine und angewandete Strategie*), took an even more quantitative position. In it he claimed that the success of a military operation depended largely on the angle formed by two lines running from the extreme ends of the base of operations to the objective. Thus, von Bulow opined, if the base of the operation was suitably placed and sufficiently extended for the two lines to converge on the target at an angle of 90 degrees or more, “victory was as certain as could reasonably be expected.”¹¹⁰ In some respects, these instances of martial theorizations may be considered as the apogee of the ultra-rationalistic theories of war. Soon, however, such rigid determinisms began to be tempered. Thus we find that beginning with Jomini and culminating with Clausewitz, military theories and theorizations on war began to temper the prospects of a rigid rationalism which was, more often than not, wrecked by the intrusions of chance and uncertainty. With this, the formal accommodation of chance and uncertainty within the rubric of war had begun.

Additionally, Hacking and Foucault show us that during the time frame within which the transformation in the conceptualization and understanding of war and

military theories from the stage of a dogmatic over-rationalization to its being tempered by the gradual accommodation of chance and uncertainty took place, there was a huge intellectual and societal transformation that was also underway. Society was becoming statistical.¹¹¹ It is in this context that, in part, the emergence of chance and uncertainty, rather, the problematization of chance and uncertainty, in the Clausewitzian context gains traction. Our immediate task at hand, therefore, will be to assess the impact of chance and uncertainty on Clausewitz's theoretical efforts and to follow the dexterous moves that he made to account for them within his architectonic of war. In the process, it will also aid us in preparing the grounds for the (re)examination of NCW that will follow.

The face of chance

In the context of the military theories of the Enlightenment Age which, as we have seen, reached their apogee in the works of Guibert, Lloyd, von Bulow, and others, the rationalistic order of things was marked by the tendency of these theorists to devise a system which would allow for the "perfect" calculability of combat. This, more often than not, spilled over into how war was understood and related to. The missing piece of the puzzle for these overly rationalistic philosophers of war was the case of the exception to the rule, which was the interruption that upset all their rationally constructed plans.

What was missing was a law or a principle that would aid in addressing the exception to the more general rules that comprised their art of war. This exception manifested itself in a myriad of ways. Thus, for example, it could take the form of natural variables, such as the weather, geography, emotions, morale, etc. Then there were other, more prosaic, variables that influenced the conduct of war. These included logistical dislocations, unforeseen bottlenecks in command and control, malfunction of equipment, etc. Even the history that these theorists used for their theorizing purposes was strewn with examples and instances of such variables disturbing the tightly controlled plans of war. Not only did they upset the operational dimensions of war, they also forced themselves into the strategic and meta-strategic dimensions of war.¹¹² The consequence of this was an even more rigid insistence on rules and principles that would make the conduct of war as friction-less as possible and the premise was that these variables could be accounted for. This is very much in evidence in, for example, Jomini's theoretical efforts. It did not mean, however, that Jomini was blind to the vagaries of chance and uncertainty. As we have seen, he held the view that:

[T]he fundamental principles upon which rest all good combinations of war have always existed . . . these principles are unchangeable; they are independent of the nature of the arms employed, of times and places . . . *Genius has a great deal to do with success, since it presides over the application of recognized rules, and seizes, as it were, all the subtle shades of which their application is susceptible.* But in any case, the man of genius does not act contrary to these rules.¹¹³

Note how Jomini, while insisting on the point that the fundamental principle upon which “all good combinations of war have always existed . . . are unchangeable . . . [and] independent of the nature of the arms employed, of times and places,” nevertheless accepted that there were “subtle shades” where the application of these fundamental principles of war were left inadequate. These he dispatched with haste to the realm of the Genius.

Now, Barry Watts informs us that Clausewitz referred to the phenomena of chance and uncertainty under the umbrella of what he (Watts) refers to as the “unified theory of Friction” (*Friktion*). He further points out that by the time Clausewitz delivered his summary lecture at the Berlin War College, in 1811, he had identified two distinct sources of what he termed “the friction of the whole machinery”: “the numerous chance events, which touch everything” and “the numerous difficulties that inhibit accurate execution of the precise plans that theory tends to formulate.”¹¹⁴ According to Watts:

[T]he second source of friction . . . internal resistance to precise plans— recalls the type of frictional impediment that Clausewitz, in a letter to his wife in 1806, had first referred to. The first — the play of chance — represents a significant expansion of the original notion through the addition of a second major category or source of friction.¹¹⁵

This, however, leaves unsaid precisely how Clausewitz would have approached the problems posed by chance and uncertainty. Beyerchen, in this context, provides us with a lead. He suggests that:

[T]he connection between chance and uncertainty provides a means of understanding both, if we draw on the insights of the late nineteenth-century mathematician Henri Poincaré, whose understanding of the matter was powerful enough that he is a frequently cited source in nonlinear science today. Poincaré argued that chance comes in three guises: a statistically random phenomenon; the amplification of a microcause; or a cool function of our analytical blindness. He described the first as the familiar form of chance that can arise where permutations of small causes are extremely numerous or where the number of variables is quite large. This form of chance can be calculated by statistical methods. The very large number of interactions produces a disorganization sufficient to result in a symmetrical (i.e., Gaussian or bell curve) probability distribution. Nothing significant is left of the initial conditions, and the history of the system no longer matters. It is possible that Clausewitz was aware of this general line of reasoning. As with magnetism and friction, important developments in probability theory were occurring in Clausewitz’s time, and we know that he read intensely in mathematical treatises.¹¹⁶

While we should note that Poincaré’s mathematical works came a few decades after Clausewitz, Beyerchen’s point is well made. Additionally, as Hacking points out, the intellectual project of addressing the phenomena of chance and uncertainty was

already evident in the works of Leibniz, who “was a witness to . . . the emergence of probability around 1660 and just afterwards.”¹¹⁷ This is lent further credence to if we pay attention to what Hacking has to say in this context:

[I]t is notable that the probability that emerged so suddenly (in the 1660s) is Janus-faced. On the one side, it is statistical, concerning itself with stochastic laws of chance processes. On the other side it is epistemological, dedicated to assessing reasonable degrees of belief in propositions quite devoid of statistical background.¹¹⁸

Further, we should not forget that Poincaré’s summation of how the phenomena of chance and uncertainty could be analyzed and addressed was the culmination of a gradual process that preceded Clausewitz by almost two centuries. This, as we have seen, was nothing less than a signal of the erosion of determinism that had been the hallmark of the rationalistic order of things post the Age of Religion. Indeed, it could be said that Poincaré’s three guises of chance – statistically random phenomena, amplification of micro causes, and our (human) propensity for analytical blindness – had already been worked out in some detail by the time Clausewitz came to confront them in the context of his theorization of war. Thus, it is possible, indeed probable, that Clausewitz would have been familiar with the developments in this field. In the context of the evolution of military thought, this transformation, albeit perhaps not strictly in these terms, was already underway when Guibert, for instance, wrote his seminal *A General Theory of Tactics*. So, what was the nature of the chance and uncertainty that Clausewitz confronted?

Let us see how Clausewitz framed this problem. In *On War*, he wrote:

War is the realm of uncertainty; three quarters of the factors on which action in war is based are wrapped in a fog of greater or lesser uncertainty. A sensitive and discriminating judgment is called for; a skilled intelligence to scent out the truth . . . War is the realm of chance. No other human activity gives it greater scope: no other has such incessant and varied dealings with this intruder. Chance makes everything more uncertain and interferes with the whole course of events.¹¹⁹

In this remarkable passage, for which he is justifiably praised, Clausewitz not only demonstrates his acute appreciation of not simply the criticality of chance and uncertainty in war but also proposes how to deal with these disruptive phenomena. But what precisely did Clausewitz mean when he referred to the “fog of greater or lesser uncertainty?”

Consider the following:

[T]he general unreliability of information presents a special problem in war: all action takes place, so to speak, in a kind of twilight, which, like fog or moonlight, often tends to make things seem grotesque and larger than they really are . . . Whatever is hidden from full view in this feeble light has to be

guessed at by talent, or simply left to chance. So once again for lack of objective knowledge one has to trust to talent or to luck.¹²⁰

This passage suggests that Clausewitz attributes information – rather, the lack of it – to the “fog of greater or lesser uncertainty” and to “chance which, particularly in the context of war, makes everything more uncertain and which interferes with the whole course of events.” Now, it is tempting to suggest that this lack of information is a function of statistically random phenomena and of amplified micro causes which the common man is unable to identify.¹²¹ Indeed, this is how most commentators approach this element in Clausewitz’s theory of war, which also dovetails quite neatly into the three guises of Chance that Poincaré identifies. But Clausewitz also hinted – but only hinted – at something else, which was in excess of statistically random phenomena and amplified micro causes which posed a seemingly insurmountable problem not simply in the context of the conduct of war, but also while positing a theory of war. Thus, for example, Clausewitz noted:

[T]he difficulties accumulate and end by producing a kind of friction that is inconceivable unless one has experienced war . . . Countless minor incidents – the kind you can never really foresee – combine to lower the general level of performance, so that one always falls short of the intended goal. . . . The military machine – the army and everything related to it – is basically very simple and therefore seems easy to manage. But we should bear in mind that none of its components is of one piece: each part is composed of individuals . . . the least important of whom may chance to delay things or somehow make them go wrong . . . This tremendous friction, which cannot, as in mechanics, be reduced to a few points, is everywhere in contact with chance, and brings about effects that cannot be measured, just because they are largely due to chance.¹²²

At first glance, it would appear that what Clausewitz is reiterating is the very Kantian distinction between the a priori and experience by insisting that unless one has experienced war, one is unable to appreciate the “countless minor incidents” that degrade the performance of – note Clausewitz’s words at this point – “the military machine,” which he identifies as “the army and everything related to it.” He also notes, among other things, the lacking of mechanics – his passing reference to Newtonian science – to account for the “tremendous friction” that the components of the military machine undergo, but also exhibit. To this we must also add his observation that not only is friction caused by the components and the sub-components of the military machine as they interact with themselves as a “whole,” but how their collective *and* individual contact with external conditions “brings about effects that cannot be measured, just because they are largely due to chance.” Based on this, we would not be incorrect to conclude that Clausewitz’s notion of chance and uncertainty was a condition marked by internal friction, which is generated as the military machine performs its tasks, and external friction that occurs as the military machine comes in contact with its operational environment. As we will see, Clausewitz did indeed design his methodology for dealing – in operational

terms – with chance and uncertainty by working from precisely such a premise. But the picture that Clausewitz builds up in this powerful passage is even more intriguing than simply these observations for if the matter were to be simply left standing at this point, it would remain a rather simplistic understanding and rendition of what is not simply a military problem, but first, a more fundamental and philosophical problem.

Consider, for example, the following:

[T]he deduction of effect from cause is often blocked by some insuperable extrinsic obstacle: the true causes may be quite unknown. Nowhere in life is this so common as in war, where the facts are seldom fully known and the underlying motives even less so."¹²³

What Clausewitz draws our attention to here is nothing less than his rather sophisticated understanding of chance and uncertainty. He notes, incisively, that cause–effect relationships decompose into meaninglessness at one point of time or the other. Note that he is not making this assertion simply in the context of the military. He specifically refers to this process of decomposition as occurring in life-as-such. Further, he identifies the catalyst that aids and abets this decomposition as something that is seemingly insuperable, but obviously extrinsic to the cause–effect relationship – the origin of which remains unknown. This state of affairs Clausewitz identifies as being present in life, but which – according to him – is discernable at a much finer resolution within the context of war and combat. In net effect, therefore, Clausewitz is not making a case for a simplistic relativism in life and war. Instead, we find that he is pointing to a condition marked by a peculiar kind of chance and uncertainty, which is in excess of the chance and uncertainty that results from the internal and external frictions of a war machine. While this may seem to appear out of nowhere, according to Clausewitz, it always-already exists. Indeed, Clausewitz also seems to be saying that it is in such turbulent and chaotic conditions that life and war unfold. We need to be careful here. The sense of chance and uncertainty that Clausewitz designates as insuperable, extrinsic, and unknown is quite different in nature from the sense of chance and uncertainty that is more commonly associated with the fog and friction that is endemic to the operational conditions of the Clausewitzian war machine. It is, of course, true that when the war machine is operational, situations and circumstances are encountered that are either the effects of friction, or are clouded in a fog of chance and uncertainty. It may also be the case that in some, indeed in most, instances the cause–effect relationship that can explain these instances of friction and of chance and uncertainty appear to be inscrutable to most; however, there is a qualitative difference between these instances and the state of affairs that Clausewitz associates with the intrinsic instability in life and war. As we will see, in the case of chance and uncertainty, which the fog and friction of war are a signature of, the possibility of making a casual connection between seemingly unrelated events remains, at least potentiality, in the hands of the Genius. On the subject of the chance and uncertainty that rents life and war, however, Clausewitz remains silent – though he

conveys much with his silence to the point of compelling us to pay even more careful attention to how he maneuvers around the issue.

Now, if we were to cast our reading of the just quoted passage from Clausewitz into Deleuzian terms, it could be said that when Clausewitz encounters chance and uncertainty in the wider expanse of life and war, he is encountering nothing less than an instance of immanence where “there are always many infinite movements caught within each other, each folded in the others, so that the return of one instantaneously relaunches another in such a way that the plane of immanence is ceaselessly being woven.”¹²⁴ Following through in the Deleuzian vein, it could be said that aside from the chance and uncertainty that Clausewitz identified as being disruptive in the operational sense, the face of chance and uncertainty that he remained silent about was the one that would have also appeared to him like a “section of chaos . . . characterized less by the absence of determinations than by the infinite speed with which they [the determinations] take shape and vanish.”¹²⁵

At this point it is expected that skeptical readers would begin to resist this correlation that is being drawn between the phenomenon of chance (and uncertainty) as encountered by Clausewitz and the Deleuzian notion of the plane of immanence. They would, however, be cautioned to revisit Clausewitz’s problem again. As mentioned earlier, Clausewitz was perceptive enough to note that there was an “insuperable extrinsic obstacle in deducing effect from cause.” What this suggests is that Clausewitz – who had personally experienced war – remained cognizant of the problems associated with causality, or more accurately, with the lack of it, on the field of battle in particular and on questions regarding life and war in general. Crucially, Clausewitz, who had personally seen the “face of battle” and who was, it is fair to say, familiar with the “tempo of operations,” would have also been able to appreciate that even if specific determinations – that is to say, concrete information – were available, the tempo of operations would necessarily render such determinations mobile thereby making them progressively indeterminate. Clausewitz’s recognition of chance and uncertainty’s originary contingent nature, which remained in excess of the exertions of an algebra that purported to contend with the fog and friction associated with war (and of life), would thus have come about in this way. Clausewitz, in this way, albeit in his own terms, would thus have confronted the problem of chance and uncertainty in terms of what Deleuze refers to as the “infinite speed with which determinations take shape and vanish.”

Now consider what Deleuze and Guattari have to say about the infinite speed that characterizes the chaos of the plane of immanence. They suggest:

This [the movement associated with infinite speed] is not a movement from one determination to the other but, on the contrary, the impossibility of a connection between them, since one does not appear without the other having already disappeared, and one appears as disappearance when the other disappears as outline.¹²⁶

Given this, it is not surprising that Clausewitz would, perhaps a trifle plaintively, write: “chance makes everything more uncertain and interferes with the whole

course of events.” Again, it is important for us to note that when Clausewitz writes about “chance making everything more uncertain,” he is not simply referring to the friction that the military machine – including its components and sub-components – experiences in itself and in its contact with the operational environment, he is also including the “exterior problem” within the ambit of chance. Note that this notion of chance and uncertainty, as we have seen earlier, in some measure always-already reflects an excessiveness. In this form, chance and uncertainty intrude and reside as unwelcome guests within any coherent ensemble – theoretical or otherwise. In this sense, therefore, the “fact of chance” that Clausewitz would have been a witness to – in originary terms – veers very close to the immanent nature of the chaos that marks the Deleuze-Guattarian plane of immanence. In fact, when Deleuze and Guattari suggest that, “[c]haos makes chaotic and undoes every consistency in the infinite . . . [it] . . . is not an inert or stationary state,”¹²⁷ Clausewitz, particularly in the context of chance and uncertainty in war, would have agreed for the undoing of the consistency of information – regardless of whether it emanated from within the “military machine” or from the contact of the military machine with its operational environment – would have been a phenomenon that Clausewitz would have readily recognized and appreciated. Thus, in the famous chapter on *Friction in War*, Clausewitz noted, “[o]nce war has actually been seen the difficulties become clear . . . Friction . . . is the force that makes the apparently easy so difficult.”¹²⁸ In this way, for Clausewitz, the more critical intellectual problem, even before the operational problem made its appearance, would have been: How to think when the condition of thought – that is to say, the condition in which thought is possible – is embedded in a condition of chaos? This, in essence, was the problem of chance and uncertainty that Clausewitz faced.

Strategizing chance

It will be evident by now that the phenomena of chance and uncertainty confronted by Clausewitz was not something that could be explained away as being merely accidental, random, and a matter of analytical blindness. Rather, it was a fundamental philosophical problem that threatened to disrupt, indeed make incoherent, his strategic intent to forge a comprehensive theory of war. Clausewitz, faced with this problem, resorted to a number of strategic and tactical maneuvers that cannot help but invite our admiration.

We have already noted that the specific nature of the problem of chance and uncertainty for Clausewitz was less a question of the lack of information; rather, it was a question of speed, that is to say, of time. In other words, for Clausewitz, the critical element was that given the tempo of operations and the infinite variations, permutations, and combinations that war-as-such entailed, the possibility of developing, maintaining, and operating on the basis of a consistent set of information was not only difficult but impossible. Seen from Clausewitz’s point of view the problem would have seemed understandably intractable. But it is also interesting to note that despite Clausewitz’s overt acknowledgment of the radical indeterminacy that the phenomena of chance and uncertainty presented – in operational and

theoretical terms – a desire for consistency and determinacy remained and this involved nothing less than a consideration of “life (particularly martial life) as the conquest of mobility.”¹²⁹

It could be argued that this was in no way different from what Clausewitz’s predecessors – particularly Lloyd, von Bulow, and Jomini – were attempting to achieve by means of their theories of war. This point of view though, at first glance seemingly true, underestimates the subtle but radical transformations that were operative in the Clausewitzian theory of war. Thus, for example, unlike the martial theories of his predecessors, Clausewitz’s theory – by allowing for the active play of chance and uncertainty in the context of war – refused to straitjacket the phenomenon of war. The result was that unlike the works of his predecessors, Clausewitz’s theory of war remained flexible enough not to be disrupted by the twin phenomena of chance and uncertainty. Thus, while his predecessors’ theories found themselves being repeatedly interrupted and dislocated by chance and uncertainty, Clausewitz’s deft maneuver to incorporate these two phenomena as intrinsic constituents of his theory – thereby making the transition from one designing an architecture of war to one purporting to unconceal the architectonic of war – made sure that his theory would (1) “not be forgotten after two or three years, and that possibly might be picked up more than once by those who are interested in the subject,”¹³⁰ and (2) “bring about a revolution in the theory of war.”¹³¹ It is worth noting that on both these counts Clausewitz was largely successful.¹³² Indeed, it could be argued that not only did Clausewitz’s theoretical exertions bring about a revolution in the theory of war, they also single-handedly created a viable paradigm within which the theory of war could be made intelligible. This, as we have seen, Clausewitz did by devising a theory of war that not only took into account the presence of chance and uncertainty, but one that was also informed by (at least an implicit) understanding of chance and uncertainty as an instance of pure immanence.¹³³

Clausewitz’s theory of war also casts an interesting light on the massive but subtle transformations that were simultaneously underway in the “social” at that time. Our interest in this is not simply driven by the fact that such transformations were evident in Clausewitz’s work. It is also motivated by the fact that these transformations provided the fundamental grounds on which Clausewitz proposed the role and function of the Genius in war. As we have already seen, one central feature of these transformations was the fact that society was becoming statistical. As Hacking informs us:

[E]very state, happy or unhappy, was statistical in its own way. The Italian cities, inventors of the modern conception of the state, made elaborate statistical inquiries and reports well before anyone else in Europe. Sweden organized pastors to accumulate the world’s best data on births and deaths. France, nation of physiocrats and probabilists, created bureaucracy during the Napoleonic era which at the top was dedicated to innovative statistical investigations. . . . the English inaugurated “political arithmetic” in 1662 when John Gaunt drew demographic inferences from the century old weekly Bills of Mortality for the City of London.¹³⁴

As a consequence, “[a] new type of law came into being, analogous to the laws of nature, but pertaining to people . . . They carried with them the connotations of normalcy and of deviations from the norm.”¹³⁵ But to what end?

Foucault shows us that this type of law emerges at the

crossroads of two processes: one that, shattering the structures of feudalism, leads to the establishment of the great territorial, administrative, and colonial states; and a totally different movement that, with the Reformation and Counter-Reformation, raises the issues of how one must be spiritually ruled and led on this earth in order to achieve eternal salvation.¹³⁶

Thus we find questions like “[h]ow to govern oneself, how to be governed, how to govern others . . . in their multiplicity and intensity”¹³⁷ surfacing. As we have seen previously, the emergence of a statistics of society or, more precisely, beginning to understand society statistically, was a transformation that had been underway for a while. By way of an example, Hacking points to Leibniz as being one of the key figures who played a role in the emergence of probability and the mathematics that underwrote it. Indeed, Leibniz, going by Hacking’s assertion, may also be considered to be the philosophical godfather of Prussian official statistics. Leibniz’s premise, in this context, was nothing less than the following: If a Prussian State was to be brought into existence (and he was all for it), the critical raw material for such a state was the population. This, according to Leibniz, was “the true measure of power of a state.”¹³⁸ And how was this measure of population, which Leibniz recognized as being the measure of a State’s power, to be ascertained? In response,

[h]e formulated this idea of a central statistical office . . . serving the different branches of administration: military, civil, mining, forestry and police. It would maintain a central register of deaths, baptisms and marriages. With that one could estimate the population, and hence measure the power of the state.¹³⁹

In Foucault’s terms, this is nothing less than a signature of the emergence of the art of government. As Foucault puts it:

[T]he state as the set of institutions of sovereignty has existed for millennia. The techniques of the government of men also existed for millennia. But it is on the basis of a new general technology [of] the government of men that the state took the form that we know.¹⁴⁰

Leibniz’s “central statistical office” may thus be considered as an early candidate of precisely such a technology—indeed of a strategic technical ensemble—designed specifically with the aim of developing and deploying this “new general technology [of] the government of men.” Further, as Foucault shows us in his studies spanning the diverse fields of psychiatry, medicine, criminology, and others,

the development of demography, of urban structures, of the problem of industrial labour – based on the core raw material of statistics of populations – had

raised in biological and medical terms the question of human “populations” . . . The social “body” ceased to be a simple juridico-political metaphor (like the one in the *Leviathan*) and became, instead, a biological reality.¹⁴¹

Considered in this light, it could be said that Leibniz’s central statistical office was effecting nothing less than a transformation of force (power, in Foucault’s terms), for, as Foucault shows us, what such strategic statistical ensembles actually did was to transform power from being merely an exclusive, separative, restrictive, repressive, and deductive tool, into an element that was productive, creative, and empowering.¹⁴² As an aside, note that the parallels between Leibniz’s central statistical office and the Office of Force Transformation are somewhat startling! Leibniz’s central statistical office, it could be said, was a remarkably prescient precursor to the Pentagon’s Office of Force Transformation. In both instances, the objective of the respective organizations being not simply to collect, collate, and analyze data, but also to create data by a progressively detailed and highly technical diagramming of Nature. In passing, it should also be noted that though we do invoke Leibniz as the philosophical father of Prussian official statistics and Clausewitz who was a Prussian by birth

[t]he Prussia that overthrew Napoleon created a conception of a society that resolutely resisted statistical generalization. It gathered precise statistics to guide policy and inform opinion, but any regularities they might display fell short of laws of society. The Prussians created a powerful bureau but failed to achieve the idea of a statistical law. That was left for the France that survived Napoleon.¹⁴³

For our purposes, of course, the crucial question remains what was the organizing principle of this state that based itself on these new techniques of governing men? It was the principle of the norm. It is critical to note that this principle organized itself around nothing less than the laws of chance which, by means of a mathematical understanding of probability, contributed in no small measure to the erosion of determinism. Though the intensity with which these norms organized themselves around the laws of chance varied from place and time – as the example of Prussia and France suggests – Hacking tells us that “[t]o believe there were such laws one needed law-like statistical regularities in large populations. How else could a civilization hooked on universal causality get the idea of some alternative kind of law of nature or social behavior?”¹⁴⁴

Responding to the question regarding the norm, Foucault’s analysis is worth looking at in some detail. Foucault observed that

[w]hat makes the totality of the Classical episteme possible is primarily the relation to a knowledge or order. When dealing with the ordering of simple natures, one has recourse to a *mathesis*, of which the universal method is algebra. When dealing with ordering of complex natures (representations in general, as they are given in experience), one has to constitute a *taxinomia*, and to

do that one has to establish a system of signs . . . [A]t the two extremes of the Classical episteme, we have a *mathesis* as the science of calculable order and a *genesis* as the analysis of the constitution of orders on the basis of empirical series . . . Hedged in by calculus and *genesis*, we have the area of the table. . . . *Taxinomia* is not in opposition to *mathesis* . . . for it too is a science of order – a qualitative *mathesis* . . . Confronted by *genesis*, it functions as a semiology confronted by history. It defines, the general law of beings, and at the same time the conditions under which it is possible to know them.¹⁴⁵

Foucault further argued that

the theory of signs in the Classical period was able to support simultaneously both a science with a dogmatic approach, which purported to be a knowledge of nature itself, and a philosophy of representation, which, in the course of time, became more and more nominalistic and more and more skeptical.¹⁴⁶

This, according to Foucault, is also the reason as to why this episteme disappeared by the end of the eighteenth century. In Foucault's words:

[A]fter the Kantian critique [and] all that occurred in Western culture . . . a new type of division was established: on the one hand *mathesis* was regrouped so as to constitute an apophantics and an ontology . . . on the other hand, history and semiology united to form those interpretive disciplines whose power has extended from Schleiermacher to Nietzsche and Freud.¹⁴⁷

Nevertheless, the identification (and later codification) of the norm that began from within the massive statistical tables of what Foucault refers to as the Classical period was a project that continued into the age of interpretive disciplines, that is to say into the nineteenth century and beyond, albeit at a curve. Thus, as Foucault brilliantly demonstrates,

[w]hat we have then is a system that is . . . exactly opposite of the one we have seen with the disciplines. In the disciplines one started from a norm, and it was in relation to the training carried out with reference to the norm that the normal could be distinguished from the abnormal. Here [that is to say in the post-Classical period, for Foucault], instead, we have a plotting of the normal and the abnormal, of different curves of normality, and the operation of normalization consists in establishing an interplay between these different distributions of normality and [in] acting to bring the most unfavourable in line with the more favourable.¹⁴⁸

In effect, therefore, the norm was not simply an acceptable parameter of behavior and/or bearing; it was also the average, that is to say, the "normal and most probable behavior of things," including individuals.

Despite Foucault's cautionary note that though the grid of kinship formed by

mathesis, *taxinomia* and *genesis* in the seventeenth and eighteenth centuries defined the general configuration of knowledge, and despite the fact that after Kant's Copernican revolution a regrouping of this grid occurred, it cannot be denied that the foundational structures on which such knowledge, that is to say, the *tabula*, was grounded remained essentially in place. This was as true for Foucault's Classical period as it was for the times that succeeded it. Why? As Foucault showed us, a table, or even simply, *tabula*, "enables thought to operate upon the entities of our world, to put them in order, to divide them into classes, to group them according to names that designate their similarities and their differences."¹⁴⁹ In this form, the *tabula* is thus a

"system of elements" – a definition of the segments by which the resemblances and differences can be shown . . . which is given in things as their inner law, the hidden network that determines the way they confront one another, and also that which has no existence except in the grid created by a glance, an examination, a language.¹⁵⁰

Thus, the *tabula* formed a grid of intelligibility – in Foucault's terms, "an ordering of things" – which, while itself undergoing a transformation in character in the manner described by Foucault, nevertheless retained the notion of a "grid." But this *tabula* also brought in its wake "the suspicion . . . of a worse kind of disorder than that of the *incongruous*, the linking together of things that are inappropriate."¹⁵¹ It is important to note that this disorder was not necessarily chaotic, rather it was a state where "things are 'laid', 'placed', 'arranged' in sites so different from one another that it is impossible to find a residence for them, to define a *common locus* beneath them all."¹⁵² Thus, in Foucault's colorful words:

[T]his . . . space in which things are normally arranged and given names . . . (also seem to resist being arranged) . . . into any coherent pattern (a grid); as though that simple rectangle were unable to serve . . . as a homogeneous and neutral space in which things could be placed so as to display at the same time the continuous order of their identities and differences.¹⁵³

Paradoxically, therefore, instead of exhibiting the stability of structures and categories, that is to say, exhibiting an intrinsic coherence and order, the *tabula* is also a site of transient, temporary, and dispersing multiplicities of groupings – an "agglutination of diverse similarities" – in a constant state of (re)organization and disturbance that seem to forever reel on the brink of a vertiginous anxiety. But Foucault also teaches us to recognize this vertigo as that induced by the complex as opposed to the vertigo of chaos for, as he suggests, "it is only in the blank spaces of this grid that order manifests itself in depth as though already there."¹⁵⁴ Thus, even there where, in Clausewitz's words, "logic comes to a stop," Foucault suggests that "there exists, below the level of . . . spontaneous orders, things that are themselves capable of being ordered, that belong to a certain unspoken order; the fact, in short, that order *exists*."¹⁵⁵

Now, our survey of military theorists of the Enlightenment Era (which roughly corresponds to what Foucault refers to as the Classical period) shows us that the dogmatically ultra-rationalistic martial theories of Puysegur, Lloyd, von Bulow, Guibert, and even that of Jomini, remained fixated by and with this grid of intelligibility. In this way, they remained partial to the *mathesis, taxinomia, genesis* series. As we have seen, it was also the case that while each of these theorists had encountered chance and uncertainty – the dark side, in a manner of speaking, of the tabula – they, in keeping with the spirit of their times, relied on the ordering principle of the *mathesis, taxinomia, genesis* series which, they optimistically held, would quell the disruptions that created a turbulent space between their theoretical efforts and actual events – a point which Clausewitz made much of. If we take Foucault's argument seriously, then it would appear that what the military theorists of the Enlightenment Age had done was to establish a "norm" from which they drew their inferences and conclusions. This norm would have been established to develop and maintain the *mathesis, taxinomia, genesis* series. What, however, these theorists were unable to leverage – to the extent Clausewitz did – was this hidden order of things that lay within the interstices of the things that populated the tabula. These were the gaps wherein (absolute) Reason came to a standstill and, as such, were the differential-spaces between "theoretical truths (the grid of intelligibility) and the multifarious unaccountable and inexplicable instances within actual events (the gaps in this grid of intelligibility)." Clausewitz, on the other hand, did not fail to recognize that both theoretical truths and actual events were underwritten by order, that is to say Reason, or "a reason," which on the one hand was obviously apparent, indeed explicit (as in the case of theoretical truths); while on the other (as in the case of actual events), it was hidden, though always-already there.

Pursuant to this, Clausewitz noted that "[t]he influence of theoretical truths on practical life is always exerted more through critical analysis than through doctrine."¹⁵⁶ For a theorist who was scathing in his attacks on the rigid theoretical "truths" of his predecessors, this turn to critical analysis was most curious, though understandable. Indeed, Clausewitz went to some lengths to discuss the importance of critical analysis while engaging in the formulation of a theory of war. As Gat informs us, Clausewitz began from the premise that "[t]heory was by no means divorced from praxis; on the contrary, it had to be translated into praxis."¹⁵⁷ For Clausewitz, critical analysis was the tool by which such a translation could be made. Yet, critical analysis could not take place in a vacuum, thus it is not surprising that Clausewitz was led to suggest that "a working theory is an essential basis for criticism. Without such a theory it is generally impossible for criticism to reach the point at which it becomes truly instructive – when its arguments are convincing and cannot be refuted."¹⁵⁸ Thus Clausewitz noted:

[I]t would be wishful thinking to imagine that any theory could cover every abstract truth, so that all the critic had to do would be to classify the case studied under the appropriate heading. Equally, it would be ridiculous to expect criticism to reverse course whenever it came up against the limits of a sacrosanct theory. The same spirit of analytical investigation which creates a theory

should also guide the work of the critic . . . The function of criticism would be missed entirely if criticism were to degenerate into a mechanical application of theory. All the positive results of theoretical investigation – all the principles, rules, and methods – will increasingly lack universality and absolute truth the closer they come to being positive doctrine. They are there to be used when needed, and their suitability in any given case must always be a matter of judgment. The critic should never use the results of theory as laws and standards, but only – as the soldier does – *as aids to judgment*.¹⁵⁹

Naturally, the question arises: Who is qualified to make judgments when “all positive results of theoretical investigations increasingly begin to lack universality” and to render a translation between theory and praxis? And, what is the nature of judgment that is being made? At this point, it is necessary to pay heed to Clausewitz’s cogent reminder about the limits of theory. In *On War*, he wrote:

[G]iven the nature of the subject . . . it is simply not possible to construct a model for the art of war that can serve as a scaffolding on which the commander can rely for support at any time. Whenever he has to fall back on his innate talent, he will find himself outside the model and in conflict with it; no matter how versatile the code, the situation will always lead to the consequences we have alluded to: talent and genius operate outside the rules, and theory conflicts with practice.¹⁶⁰

This conflict between theory and practice, which leads “talent and genius” to operate outside the rules, was nothing but a tacit recognition of the problems that chance and uncertainty posed not simply in the operational art of war, but in the theorization of war itself. It also made clear the precise role that “talent and genius” played in such circumstances. Thus, Clausewitz’s positioning of “talent and genius” assumes a significance that we will be ill-advised to ignore – though this assessment comes with a caveat. It is essential to clarify the significance of the last line in the aforementioned quote from Clausewitz for it has the potential to be misunderstood. We should pay particular attention to the fact that Clausewitz here is being highly critical of the theoretical positions held by his predecessors and is not endorsing the point of view that “talent and genius operate outside the rules.”

As we have seen in the case of Jomini, the art of war was essentially a schematic which attempted to provide for most, if not all, the possibilities in war. These constituted the rules and laws that governed war and its conduct. But we have also noted that despite the bent to over-rationalize the phenomenon of war, the martial theorists of the Enlightenment era were very much aware of the fact that the phenomenon of war was unavoidably and problematically affected by chance and uncertainty. In the specific context of Jomini’s art of war, these problems were dispatched with some haste to the realm of the Genius.¹⁶¹ What this suggests is that for Clausewitz’s predecessors, when and if necessary, talent and genius could indeed operate outside the general rules and prescriptions of war. This, as we have alluded to earlier, was their mechanism for dealing with the vagaries of chance and

uncertainty. But Clausewitz insisted, in a note written in 1808 or 1809 that “genius, dear sirs, never acts in contrary to the rules.”¹⁶² Instead, what Clausewitz suggests is the following:

Anything that could not be reached by the meager wisdom of such . . . points of view was held to be beyond scientific control: it lay in the realm of genius, which rises above all rules. Pity the soldier who is supposed to crawl among these scraps of rules, not good enough for the Genius, which Genius can ignore, or laugh at. *No; what genius does is the best rule, and theory can do no better than show how and why this should be the case.*¹⁶³

It is interesting to observe that at this point, Clausewitz appears closest to Kant, for the latter, in his monumental *Critique of Judgment*, wrote: “Genius is the talent which gives rule to art . . . [it] is a talent for producing that for which no definite rule can be given.”¹⁶⁴ Clausewitz’s critique of his predecessors’ theories with specific reference to the role of the Genius is thus a complicated one. While on the one hand he decries the attempt of the Enlightenment theorists to leave all and sundry which fell outside their rational schematics of war to the realm of genius, on the other hand, however, Clausewitz remained as beholden as them to the notion of the Genius.

The proverbial twist in the tale is present in *how* Clausewitz’s military genius operated given the rules and principles that govern war and its conduct. Clausewitz attributes the role of a rule-maker to the Genius which leads him, as we have seen, to insist on the point that “genius never acts contrary to the rules.”¹⁶⁵ Naturally, the question arises: To what end did Clausewitz position the Genius as a player by rules and as the one who stands above them? For Clausewitz, the Genius, operated as one who by means of a superior and more acute analytical ability was able to discern the order of things in instances and events where other more common analytical efforts could only discern a seemingly insuperable fog of uncertainty. We should also be careful to note that Clausewitz, in a rather self-deprecating manner, distinguishes the precise type of genius that plays this central role in a martial context. Thus Clausewitz states:

Any complex activity, if it is to be carried on with any degree of virtuosity, calls for appropriate gifts of intellect and temperament. If they are outstanding and reveal themselves in exceptional achievements, their possessor is called a “genius” . . . But since we claim no special expertise in philosophy or grammar, we may be allowed to use the word in its ordinary meaning . . . “genius” refers to a very highly developed mental aptitude for a particular occupation.¹⁶⁶

Note that this complex activity (war) was not chaotic. Indeed, it could not be. Rather, it was “complex,” that is to say, it ranged from those empirical orders/codes – governing perception, exchange, language, techniques, values, and hierarchy of practices – to “scientific theories or philosophical interpretations which explains why order exists in general, what universal law it obeys, what principle can account

for it.”¹⁶⁷ The Clausewitzian Genius, thus, stands between these two extremes in “another domain which, even though its role is mainly an intermediary one, is . . . more confused, more obscure, and probably less easy to analyze.”¹⁶⁸ Thus, Clausewitz stated:

We cannot restrict our discussion to *genius* proper, as a superlative degree of talent, for this concept lacks measureable limits. What we must do is to survey all those gifts of mind and temperament that in combination bear on military activity. These, taken together, constitute *the essence of military genius*. We have said *in combination*, since it is precisely the essence of military genius that it does not consist in a single appropriate gift – courage, for example . . . Genius consists *in a harmonious combination of elements*, in which one or the other ability may predominate, but none may conflict with the rest.¹⁶⁹

Note how Clausewitz, while acknowledging that there is a need to precisely identify the type of genius who gains prominence in the field of military matters – the military genius – also marks the expansive essence of this particular type of genius whom he distinguishes from the other types of genius. Thus, according to Clausewitz, the military genius is one who, unlike say, a mathematical genius or a philosophical genius, is able to imbibe a harmonious combination of elements. In fact, Clausewitz went even further. He suggested that such a genius was quite a singular personality. Thus, in Clausewitz’s words, “[i]f every soldier needed some degree of military genius . . . armies would be very weak, for the term refers to a special cast of mental or moral powers which can rarely occur in an army.”¹⁷⁰ Then, after noting the importance of courage in the context of his discussion of the Genius, Clausewitz highlighted the key characteristics that distinguish this genius from the norm. It is worth quoting Clausewitz in some detail here:

If we pursue the demands that war makes on those who practice it, we come to the region dominated by the *powers of intellect*. War is the realm of uncertainty . . . A sensitive and discriminating judgment is called for; a skilled intelligence to scent out the truth. Average intelligence may recognize the truth occasionally, and exceptional courage may now and then retrieve a blunder; but usually intellectual inadequacy will be shown up by indifferent achievement . . . Since all information and assumptions are open to doubt, and with chance at work everywhere, the commander continually finds that things are not as he expected . . . If the mind is to emerge unscathed from this relentless struggle with the unforeseen, two qualities are indispensable: *first an intellect that, even in the darkest hour, retains some glimmerings of the inner light which leads to the truth; and second, the courage to follow this faint light wherever it may lead.*¹⁷¹

And then to make the point even clearer, Clausewitz insisted that this faculty of the Genius is not simply limited to the heat of battle, that is to say the engagement, but also to strategy.¹⁷²

By now it will have been observed that the Kantian thematic that emerges from within Clausewitz's discussion of the Genius is stark and difficult to ignore. Thus, for example, for Clausewitz, "genius consists in a *harmonious combination of elements*." This notion of the Genius corresponds to what Deleuze describes as the Kantian notion of the Genius for whom "the creative intuition as intuition of an other nature, and the concepts of reason as rational Ideas, are adequately unified."¹⁷³ Note that for Kant, "the theory of Genius . . . manages to bridge the gap that had opened up between the beautiful in nature and the beautiful in art."¹⁷⁴ This was not simply a matter of a theory of aesthetics, for the theme of an agreement among several faculties which, as Kant's third Critique shows us, can only be embodied in the figure of the Genius, is a running constant in the Kantian System. Kant, in the *Critique of Pure Reason*, had suggested that there was a tripartite harmonious relationship between the faculties of Understanding, Imagination, and Reason in keeping with a speculative purpose. The core objective of the first Critique was to demonstrate how the understanding disposes a priori concepts by inducing the Imagination and Reason to subject objects for speculative purposes to itself. In the *Critique of Practical Reason*, Kant took the argument a step further and demonstrated how Reason, mediated by the Moral Law, determines supersensible objects which are necessarily subject to it and how Reason induces understanding to a particular function in accordance to a practical purpose.¹⁷⁵ Thus Deleuze cautions us:

[I]n the first two Critiques . . . we cannot escape the principle of an agreement of the faculties among themselves. *But this agreement is always proportioned, constrained and determinate*: there is always a determinative faculty that legislates, either the understanding for a speculative reason, or reason for a practical purpose.¹⁷⁶

But, in the case of aesthetic judgment, which Kant discusses in the third Critique, "the imagination is liberated from both the domination of the understanding and reason."¹⁷⁷ Kant's argument, as highlighted by Deleuze, is simple, but incisive. Thus, Deleuze notes:

Esthetic pleasure is itself disinterested pleasure: it is not only independent of any empirical purpose, but also any speculative or practical purpose. It follows that esthetic judgment does not legislate; it does not imply any faculty that legislates objects. Indeed, how could it be otherwise, since there are only two sorts of objects – phenomena and thing-in-themselves: the first are governed by the legislation of understandings for a speculative purpose; and the second, by the legislation of reason for a practical purpose?¹⁷⁸

But this "liberation" of the Imagination also allows for the possibility of enabling the other two faculties to be liberated in themselves. Thus, Deleuze, while reading Kant's third Critique, tells us that:

The *Critique of Judgment* releases us in a new element: 1) a contingent agreement of sensible objects with all our faculties together, instead of a necessary

submission to one of the faculties; 2) a free indeterminate harmony of the faculties among themselves, instead of a determinate harmony presided over by one of the faculties.¹⁷⁹

It is only after establishing this that Kant, according to Deleuze, suggests that the Genius “engenders the esthetic agreement between the imagination and the understanding. It engenders each faculty in this agreement: the imagination as free, and the understanding as unlimited.”¹⁸⁰ Thus, the complex arguments that make up Kant’s *Critique of Judgment* “converge on . . . the suprasensible unity of our faculties, “the point of concentration,” the life-giving principle that “animates” each faculty, engendering both its free exercise and its free agreement with the other faculties.”¹⁸¹ It is for this reason that Kant emphasizes the crucial role played by his *Critique of Judgment*, for it was nothing less than an attempt by which a passage between a speculative purpose and a practical purpose is made.

The significance of the Kantian notion of the Genius, which equally applies to the Clausewitzian notion of the Genius is, thus, aptly summed up by Deleuze in the following terms:

Genius has properties analogous to those of purpose: it furnishes a matter, it incarnates Ideas, it causes reason to give birth to itself, and it liberates the imagination and expands the understanding. But genius exercises all these faculties first and foremost from the vantage point of the creation of a work of art. Finally without losing any of its singular and exceptional character, genius must give a universal value to the agreement which it engenders, and it must communicate to the faculties of the spectator something of its own life and force.¹⁸²

The Clausewitzian Genius, which, as we have established earlier, is closely modeled along the lines of the Kantian Genius, is thus an entity or an agent who is able to operate in an unrestricted manner in a condition bereft of Reason and Understanding. This, as we have seen, is the condition that is not only evident in the chance and uncertainty that characterizes Real and Absolute War, but also in the anterior condition of Absolute War, which we identified as being “the pure concept of war.” We should also not ignore the core functionality of the Clausewitzian Genius, who was not simply limited to operating in an unrestricted manner in conditions bereft of Reason and Understanding, he was also to “make” rules, principles, and laws by which reason and understanding could be brought to such conditions.

Thus, we find the Clausewitzian Genius performing three critical functions. First, the Genius deals with the complexity of the machinations of the war machine, that is to say, with the fog and friction that is internal to the war machine. In this role, the Genius is the one who is able to, by means of a superior faculty of perception, make causal connections and to chart out the likely trajectory of the effects of such friction. Second, the Genius also deals with the external friction that comes about as the war machine comes in contact with its operational environment. This

operational environment is marked by a proliferation of qualities and forms – a multiplicity of existing things – which creates “tangled paths, strange places, secret passages, and unexpected communications.”¹⁸³ Yet, as Foucault shows us, this profusion of forms and qualities was (and remains) underwritten by the *mathesis*, *taxinomia*, *genesis* series, which hinted at the presence of an order

which is given in things as their inner law, the hidden network that determines the way they confront one another, and also that which has no existence except in the grid . . . and it is only in the blank spaces of this grid that order manifests itself in depth as though already there, waiting in silence for the moment of its expression.¹⁸⁴

For the majority, afflicted by an analytical blindness that the initial plethora of qualities and forms trigger, discerning this overt and covert presence of order can be daunting. Thus, the second task of the Genius was to be able to cast a keen eye over such tangled pathways and to recover the order that lay below them. The third task of the Genius was to make “manifest the modes of being of order [which] can be posited as the most fundamental of all: anterior to words, perceptions, and gestures.”¹⁸⁵ Recall, in this context, that the key characteristic of the Kantian Genius was to be able to incarnate Ideas, to assist in the birth of Reason, to liberate the Imagination and to expand Understanding. In a similar fashion, by deploying higher intellectual abilities backed by a very finely tuned pitch of vision, the Clausewitzian Genius strove to bring order to the chaos of war. Thus, Clausewitz, while noting that the Genius could never hope to be of historical significance if he did not display courage, fortitude, character, and temperament, observed that:

Circumstances vary so enormously in war, and are so indefinable, that a vast array of factors has to be appreciated – mostly in the light of probabilities alone. The man responsible for evaluating the whole must bring to his task the quality of intuition that perceives the truth at every point . . . What this task requires in the way of higher intellectual gifts is a sense of unity and a power of judgment raised to a marvelous pitch of vision, which easily grasps and dismisses a thousand remote possibilities which an ordinary mind would labor to identify.¹⁸⁶

In this context, recall also Clausewitz’s principal concern while fashioning a viable theory of war. As we have seen, he insisted that his theory of war would leave room for every sort of extraneous matter, which resists codification – indeed even the prospect of theorization. Given the aforementioned, it is not surprising that, for Clausewitz, the Genius was the ultimate instrument who could gather up all these loose ends (which, in the context of war and life are complex, multi-varied, and which continually multiply exponentially) thereby fashioning an order of sorts, which becomes laws, rules, and principles, in the loose manner in which Clausewitz had defined them.

The only matter that now remains to be addressed before we can conclude this extended discussion on the Clausewitzian architectonic of war is the question of the

immanence of chance and uncertainty that we asserted Clausewitz had fleetingly alluded to when he referred to “the pure concept of war.” We have already established that a formal theory of war – as the examples from the theories of war of the Enlightenment Age show us – would have not been able to accommodate the fog and friction of war, leave alone the chaos that characterizes chance and uncertainty in their immanent form. We also noted Clausewitz’s recognition of this and of his disparaging observations on the attempts of his predecessors to do precisely this. The question thus remains: Given that we have asserted that Clausewitz did in fact recognize the immanent face of chance and uncertainty, how did his theory of war accommodate the same?

We have already noted that Clausewitz had remained silent about this problem. But, considering the functions of the Genius, particularly the third function as mentioned above, we will not be too far off the mark if we suggest that, for Clausewitz, the Genius remained the only viable instrument by which chance and uncertainty – in their immanent guise – could be dealt with. Recall that, following Kant’s argument, the Clausewitzian genius was the only one who could “perceive the truth at every point.” Moreover, under the regime of the Kantian Genius, Reason, Understanding, and Imagination achieve a “free/liberated” unity thereby infusing what Deleuze refers to as “the life-giving principle that animates each faculty, engendering both its free exercise and its free agreement with the other faculties . . . [resulting in] . . . the supersensible unity of our faculties.”¹⁸⁷ It is important for us to note that the notion of a unity (which in Kant’s case is suprasensible) that the Kantian Genius brings about is a throwback on the essential order of things – overt and covert – that Foucault had alerted us to. Of course, this unity, which is obtained by the harmonious combination of the faculties, is one which is invisible, though existent, to more common minds. Thus, the Genius – and this is as applicable to Kant as it is to Clausewitz – when faced by the immanence of chance and uncertainty and in the absence of any specific determinations is able to “create matter,” which also entails the giving of “form” by adjusting the Imagination which is liberated from an indeterminate understanding. In this way, the Genius is able to cognize the slice of chaos that seemingly rents life and war and is able to posit a universal value. It would, therefore, seem that despite the free reign that the Genius gives to the Imagination – under the Kantian system – the turn to an ordering remains in place, though the act of this ordering is wholly limited to the purview of the Genius. Thus, while Clausewitz, understandably, remains silent on the matter of “the pure concept of war” and of the immanence of chance and uncertainty that condition entails, implicit in his positioning of the Genius in his discussion of war, is the belief (for it is nothing less than that) that the faculties that the Genius can marshal can create some kind of a comprehensible and coherent order from the chaos of chance and uncertainty.

Clausewitz: Q.E.D.

When we began our discussion on Clausewitz and his handling of chance and uncertainty in war, we suggested that the core problematic for Clausewitz was not

simply the combating of chance and uncertainty—manifested as the fog and friction of war; rather, it was more a question of how to think when the condition of thought is one of chaos. It will be noted with some interest that while Clausewitz did not seem to make much headway in this direction, our discussion on his notion of the Genius, and his positioning of the Genius in the broader outline of his architectonic of war, signals that Clausewitz was fully aware of the immanence of chance and uncertainty in the context of life, war, and in the conduct of war. Given that he was operating from within a Kantian-inspired regime of thought and philosophy, for Clausewitz, the Genius was the best, most optimal, instrument that he could deploy to address the unique problem posed by the originary anteriority of chance and uncertainty. It also allowed him to devise an architectonic of war that—unlike that of his predecessors—resisted any serious deconstruction under the relentless assault of these twin phenomena. This, as the history of military thought since Clausewitz demonstrates, has remained central to any serious consideration of war and its conduct. In a similar fashion, his enframing of what originally started as the pure concept of war—and in its modified form, Absolute War—with the rational order of politics served to bring war to Reason and thus, made war Real. Collectively then, these twin Clausewitzian features—the rational order of politics and chance and uncertainty (in all their senses) mediated by the Genius—served as an endoskeleton to his architectonic of war. They have also served to ensnare our imagination of war till date.

However, it is only with the emergence of NCW that this Clausewitzian imagination of war begins to achieve its materiality—in Real and Virtual terms. As was mentioned at the very outset of this study, this transformation is being accompanied by a re-threading and re-weaving of the two principle sinews of the Clausewitzian imagination of war—politics and chance/uncertainty. In what follows, we will take a closer look at the phenomenon of NCW which, as a *concept* of operations, is an ambitious attempt to re-present the original Clausewitzian theory of war within mobile and real-time landscapes of various hues, complexities, and probabilities and, in this sense, is being touted as *the* theory of war for the twenty-first century.

3 Machining (network-centric) war

The Clausewitzian theory of war has proven itself to be one of the most comprehensive theorizations of not simply the conduct of war, but also of the *concept* of war. As we have seen, despite its lineage – which can be traced back to the early and ultra-rationalistic theories of war and combat – the Clausewitzian architectonic was crafted to ensure that the theoretical framework within which we understand, relate to, and experience war, has remained robustly flexible to withstand the test of time. In this connection, it is also worth mentioning that the relevance of the Clausewitzian theory of war has not been diminished despite the advent of increasingly powerful weapon-platforms culminating with the production and deployment of the thermo-nuclear weapon. As the works of Brodie, Freedman, Luttwak, Wohlsletter, and Schelling, among that of others, show, even in martial scenarios involving the mutually assured destruction of the belligerents (and of others), the framework of analysis has always been cast in a Clausewitzian mode. This flexibility that was built into the Clausewitzian architectonic of war is indeed remarkable and is a testimony to the strategic success of the Clausewitzian project. The question, therefore, stands: What accounts for the call to re-evaluate the Clausewitzian theory of war in the Age of Information?

As mentioned at the outset of our investigation, not every strategist and theorist of war agrees with the need to interrogate the canonical sanctity of the Clausewitzian theory of war. They argue, with some justification, that while the increasing proliferation of digital technologies may have, in many ways, changed how war is waged, essentially, there have been no fundamental changes to the core conceptual principles that underwrite the Clausewitzian theory of war. Thus, they assert, that while the character of war may have changed, the principles of war remain eternally sacrosanct. Their radical counterparts, of course, claim that the emerging relation between *bios* and *technos* is changing the very paradigm of what it means “to be human.” Thus, they claim that if that what we understand as “the human” changes then the relationship between war and “the human” must also change. In many ways, this is a very difficult argument to dispute. It is quite true that the emerging digital dependency-structures have changed the way we relate to the world which, in turn, is bringing about a change in some of fundamental concepts of what it means “to be human” and, in even more fundamental terms, what it means to be “a life.” Yet, when considered in the context of the emerging theories

and doctrines of network-centric warfare (NCW), we find that despite the rapid and ubiquitous proliferation of advanced digital, computing, and related technologies, the much hoped for (and much theorized) transformation in the way in which we, in the first instance, think about war does not appear to have taken place. This is not to say that the conduct of war has not been transformed. Certainly, it has. Yet the context in which these transformations have taken place and continue to do so remains firmly ensconced within the Clausewitzian architectonic of war. In other words, while there has been a shift in focus from mass-based to information-enriched armies – this being reflected by the increasing tendency to prioritize information-flows, grids and meshes, and effects-based operations – the *concept* of war has remained captive to “the political,” which reiterates the powerful conceptual hold that the Clausewitzian theory of war continues to exercise over our martial imagination.

Thus, the most commonplace accounts of NCW suggest that the alleged transformation in military affairs is more a case of the informationalization of the Clausewitzian theory of war as opposed to a true re-evaluation of not simply the conduct of war, but also of the *concept* of war itself. The often unstated strategic objective that underpins the emergence of the NCW theories and doctrines is to develop a technologically-driven asymmetric advantage that will alter the way in which war can be prosecuted. In what follows, we will trace a brief genealogy of NCW, wherein our core objective will be to highlight the Clausewitzian framework within which the theories and doctrines of NCW are said to be unfolding. This will set the stage for us, in a subsequent chapter, to identify the subtle, but radical, ways in which the informationalization of the Clausewitzian paradigm of war appears to, paradoxically, morph the Clausewitzian architectonic thereby revealing to us how a radical re-appreciation of the traditional *concept* of war may be undertaken.

Behind the network paradise

In late 1957, the US military and scientific community suffered, what can only be called, a strategic surprise. Weighing in at 183 pounds, with a 96-minute orbital cycle around the earth, Sputnik, the world’s first artificial satellite, had been launched by the USSR.¹ This event had, among others, one particular repercussion which is of interest to us. The launch of the Sputnik forced US military thinkers and scientists to consider its impact in terms of the potential exploitation of “space” (as a so-called dimension) and the resultant geopolitical and strategic implications that emerged as a consequence. President Eisenhower was quick to realize that there was an immediate and urgent need to harness the scientific talent of the US and thus, in 1958, he established the Advanced Research Projects Agency (ARPA), which was designed to function as the central research and development organization for the US Department of Defense.² Within the ARPA, a special office was established to support research dealing with the field of computers and computer-related technologies. This was the Information Processing Techniques Office (IPTO).³ In addition to its “pure research” tasks, ARPA was also assigned to look

into how best to utilize its investment in computers via the Command and Control Research Program (CCRP).⁴

Further, in the 1960s, scientists began to come to the conclusion that some kinds of behavior occurring in the natural world were patently inexplicable when examined in detail. Increasingly, they began to discover that “the intrinsic inter-relationships of elements within a complex system give rise to multiple chains of dependencies.”⁵ They also discovered that the existent tools – primarily mathematical – were unable to satisfactorily analyze and model the behavior of these complex systems. This led to a spurt of activity in what became the field of the “new” physics – chaos, complexity, and non-linearity. Though preceded by luminaries like Jules-Henri Poincaré who, as a US Air Force (USAF) officer in a classic example of an understatement put it, “had inklings of the existence of chaos”⁶ in the late 1800s, it was the work done by Edward Lorenz in the field of meteorology that first enabled, using large computers, a detailed observation of chaotic systems. “Lorenz was trying to make sense of the all-too-frequent discrepancies between what weather forecasters say and what actually happens.”⁷ As a result of his investigations, Lorenz coined the now famous phrase – the butterfly effect – which “captured the idea that through chaos the smallest of events can lead to the most massive of consequences.”⁸ In due course “the ‘butterfly effect’ acquired a technical name: sensitive dependence on initial conditions.”⁹ As we will see, these innocuous beginnings were portents of the emergence of a phenomenon, which would have a lasting effect on war and its conduct. In this sense, they were also the conceptual bedrock on which the emerging edifice of NCW stands.

But while we do so, it is also important not to lose sight of the fact that we can trace these seemingly radical transformations – popularly gathered under the rubric of NCW – that are underway in the theory and practice of war today to concepts present in Clausewitz’s theory of war. Previously it was suggested that Clausewitz’s architectonic of war was mapped along what Foucault identified as the *mathesis*, *taxinomia*, *genesis* series. This was, as we have seen, based on the series that Kant had developed in his Critiques – Reason, Understanding, and the Imagination. Further, it was suggested that between the gaps and crevices that accompanied particularly the *taxinomial* order of things, there were other hidden sources of order, which only – this applying as much to Clausewitz, as to Kant – the Genius could discern and take advantage of. For the most part, however, these gaps and crevices were characterized by conditions of complexity that seemed to veer into chaos. The Genius thus was the primary instrument by which military theorists, including Clausewitz, dealt with this condition of complexity, non-linearity, and chaos. With the emergence of the “new sciences,” however, the Genius, particularly in the martial context, begins to undergo a curious “democratization.” Buoyed by the rapid developments and evolutionary changes in ICTs which, in turn, are deeply informed by the theories of networking, complexity, and non-linearity, the hitherto “singular” agency of the Romantic Genius can be said to be undergoing a rapid transformation into a distributed and decentralized capability. The power of the Genius, it could be said, is being pushed to the edges.

NCW: A preliminary overview

The dramatic rise in computing power and the viral spread of high-speed information networks – spurred on by the Internet – has heralded the emergence of what is popularly known as the Information Age. Among other things, it is marked by an increasing ability to create/acquire, organize/re-arrange, distribute/disseminate information/knowledge using sophisticated binary-digital computer systems.¹⁰ As a consequence, these highly advanced digital and “digitized” technologies – beneficiaries of the positive effects of Moore’s Law¹¹ – are also proliferating as infrastructures, or more precisely, as dependency-structures across a wide variety of ecologies which increasingly complement (and under some circumstances, contradict) the more traditional and commonplace experience of the Real.¹² This has led, as some suggest, to the progressive compromise of the classical Laws of Thought – the Law of Identity, the Law of Contradiction, and the Law of the Excluded Middle.¹³ The Real, it is contended, has become more complex than ever before.¹⁴ Thus, it is argued, the Age of Information “should be labeled a “knowledge revolution” since it encompasses advances in information technologies that significantly alter the politics, economics, sociology, and culture of knowledge creation and distribution.”¹⁵ This, in brief, is the backdrop against which the mode of combat commonly referred to as NCW has emerged.¹⁶

NCW’s technological signature, if one looks for it, is writ large. Note, for example, the transformation of air fleets of the Second World War and Cold War vintage. Today, increasingly, the intended force-posture is overtly curving towards the development/acquisition and integration of sophisticated weapons/sensor-platforms and suites that create fine grids and meshes of information-flows.¹⁷ These are meant to contribute to the production and dissemination of a diverse array of transient cartographic images and perspectives – *battlespaces* – with complexly interwoven and inter-dependent intensities, and are most commonly identified in terms of states, or conditions, of alert/emergency, wherein the enemy of the moment is framed and neutralized – physically *and* otherwise.¹⁸ US Navy carrier-centric fleets have repeatedly demonstrated over the past decade that regardless of terrain (accessibility) and weather (visibility) conditions, they can create a remarkably diverse and mobile array of weapon-clusters – *battlenodes* – from where a variety of passive and active surveillance operations take place – manned and/or unmanned.¹⁹ Displaying the most flexibility in testing the emergent concept(s) of NCW, the US Navy is in the process of transforming itself into a capability-based modular expression of force that can stretch and extend *battlespaces* into the gaps, cracks, and faultlines of the familiar dimensions of space and time.²⁰ In a complementary fashion, ground formations are also being re-equipped with smart technologies, which plug into the virtual maps that the air-breathing and hydro-capable platforms create.²¹ Not surprisingly, these ground formations are able to create and project smaller, but highly calibrated, nets and meshes that give their wider – more global – counterparts a finer resolution. Digitized formations – across the geo-physical-sensorial spectrum – thus are no longer expected to troop onto the battle-field, rather, they surge, swarm, and quilt *in battlespace* – their primary task being

to contribute to the “sense and response” of the full-spectrum military-machine to the ever-fluid demands of battle.²²

Semantic implications of NCW

Foucault teaches us that “in every society the production of discourse is at once controlled, selected, organized and redistributed according to a certain number of procedures.”²³ A careful examination of such practices of any society and its institutions reveals the often hidden prohibitive and exclusive practices that govern the production of discourse and more often than not they are geared to establish, in Foucauldian terms, an “order of things.” A cautionary note is warranted here. An “order of things” tempts us to think in terms of “a totalitarian periodization, whereby from a certain moment and from a certain time, everyone would think in the same way . . . [and] . . . in spite of surface differences, say the same thing.”²⁴ However, an investigation of discursive practices and formations uncovers “a level of homogeneity that has its own temporal articulation . . . and . . . at this level it establishes an order, hierarchies . . . that excludes a massive amorphous synchrony, given totally once and for all.”²⁵ This suggests that while homogeneity does exist, it is temporally specific and susceptible to change. Whether this change is dramatically revolutionary or is a more gradual and evolutionary process is open to debate, but the fact cannot be denied that “change” remains a constant feature of discursive practices characterized by a “series of gaps, intertwined with one another, interplays of differences, distances, substitutions, transformations.”²⁶ The issue surrounding the production of discourse and discursive practices that is of interest to us, given the overarching objective of our investigation, is that of exclusion.

Foucault identifies the principle of exclusion as being characterized by, among other things, a division and rejection – specifically the opposition between reason and folly.²⁷ It is instructive to note that Foucault, especially in the latter stages of his career, based on this principle of exclusion, attempted “to develop a theory of the relation between war and power as well as a strategy of power.”²⁸ Now, working from the premise that NCW, and more generally the project of force transformation, is concerned not only with power, but also with its strategization and transformation, it will be worth our while to consider an illustrative example offered by Foucault in some detail.

In the Middle Ages, Foucault suggests, the phenomenon of madness was reflected in speech as the words of a madman stood outside common discourse.²⁹ By this Foucault meant to say that the speech of the madman was “considered null and void, without truth or significance, worthless as evidence, inadmissible in the authentication of acts or contracts.”³⁰ But Foucault also identifies a curious paradoxical situation at play here, which is attributable to the form of the madman’s speech. He finds that while the madman’s speech was considered to be outside reason and rationality there was, simultaneously, a curious investiture of some hidden truth in the madman’s words, which were often taken to be a signature of “rationality more rational than that of a rational man.”³¹ In the late eighteenth century,

however, a change appears to take place. The madman's speech was no longer dismissed as meaningless. Even the silence of the madman conveyed meaning. In other words, there was an increased interest in the content of the madman's speech; a prioritization of the content over the form began to appear. This, Foucault contends, begins to occur within a network of institutions characterized by the techniques of epistemic and documentary discipline.³²

A couple of points of interest, particularly in the context of this study, are of immediate relevance to us. First, it is difficult to ignore the shift in emphasis from form to content. This points to the (re)location of truth, characterized by Reason, which is increasingly found in the content as opposed to the form of speech, a fact which, Foucault claims, has its antecedents from the Greeks of the sixth and seventh centuries.³³ The second point of interest is the looming presence of institutions that permits/authorizes/legitimizes the deciphering of the madman's speech according to certain established norms. In other words, the activities of the doctors and psychoanalysts (collectively, the agents empowered to listen to and understand the speech/silence of the madman) becomes increasingly guided by the network of institutions that they are a part of. In this way, truth becomes an institutional preserve.

It will be appreciated that the relocation of truth from the form of speech to its content combined with the directive/authorizing/legitimizing function of institutions marks the exclusive nature that discursive practices have assumed. The quantification of the *ab-normal* is at once—by means of the techniques of classification and documentation—both individualizing and marginalizing. Thus, those who conform are “in” and those who do not are “out.” This is a specific application of a technique of power on the individual and, as such, is marked by an unusual degree of submission on the part of the individual to this particular mechanism of power. This is illustrative of the hegemonic tendency inherent in formations and practices of discourse. In this connection, it is interesting to note that if discursive practices are, among other things, the grounds for the “conditions of possibility,” then those very grounds are sites wherein maximum power is exercised in very particular and specific ways.³⁴ Given this, it does not take too much of an effort to recognize that discursive practices, understood in light of the institutional operation of power relations, attempt to not only control or determine the conditions of possibility, but also to prescribe the limits of the conditions of possibility by circumscribing them with rules, laws, disciplines, and doctrines. There are two issues at stake in Foucault's example of the madman. The first, highlighted by Jacques Derrida, looks closely at the question regarding madness within the context of Reason, while Dillon highlights the second in his examination of the transient nature of words and, by extension, of language.

On a close reading of Foucault, Derrida identifies a trap which Foucault, while being acutely aware of, fails to avoid when he purports to write “a history of madness.” The trap is the one set by classical Reason to “catch madness.”³⁵ A history of madness (as distinct, for example, from that of psychiatry which purports to study madness) should, in simple terms, lie outside the frame of Reason (where madness is considered to lie beyond/outside the domain of Reason, thus free from

all comparative and contextual links to Reason), yet the language that attempts to express this history is itself, to use a commercial term, a “wholly owned subsidiary” of Reason. Thus, Derrida, in his observation of this trap that Foucault’s project is confronted with, points to the essential futility of attempting a study of madness from within the confines of Reason.³⁶ Importantly, Derrida’s observation also highlights the violence that is implicit within Reason which surfaces as it attempts to account for madness within its own logic by casting madness as its own antithesis. This is Reason’s strategic maneuver – to “contain” madness within its domain – and which is manifested by its taking recourse to develop and deploy strategies to articulate that which may lie outside the field of Reason.³⁷ In this way, the envelope of Reason is thus continually being pushed outwards.

Dillon, on the other hand, observes that words are “literally incomplete . . . no word commands that of which it speaks, or what is spoken through it . . . Neither can words simply be commanded.”³⁸ The uncanniness of words is evident in the fact that they speak not only by their articulations, but also by their silence,³⁹ meaning that, aside from their activity of revealing, words also engage in acts of concealment. Words (and, by extension, language), therefore, display an inherent elusiveness and, as Dillon states, an “incorrigible recidivism.”⁴⁰ Thus, for example, “words fail us;” “we are rendered speechless;” “we remain silent” in more ways than one. Silence (which is both silence as opposed to that which is audible and the implicit silence of words which emerges by the very act of articulation in the form of that which remains unarticulated) then, like speech, is a discourse and is pregnant with meaning – comprehensible or otherwise. Indeed, Foucault also alludes to this in his analysis of the silence of the madman and the parallel focus of institutions and their agents as they attempt to gain mastery over this (silent) discourse. Yet, in light of Dillon’s observations, one is left wondering whether the propensity of institutions to effect a totalizing control by means of discourse, discursive practices, and words that simultaneously speak and remain silent is indeed possible.

What Foucault’s project, supplemented by Derrida’s and Dillon’s observations, does highlight is the continued *attempt* being made by institutions and practices to overcome these gaps and omissions in language and discourse. Of course, these attempts are both overt and covert. More often than not, these colonizing and controlling attempts are masked by a seductive allusion to the provision of security, whereby the latent insecurity (manifested by the instability) of discourse is deemed to be mitigated under the shadow of institutions and their agents⁴¹ by means of established norms, rules, laws, and doctrines. Thus Deleuze and Guattari observe that “[l]anguage is made not to be believed but to be obeyed, and to compel obedience.”⁴² For our purposes, particularly in the context of the emergence of ICTs and of their increasingly extensive deployment in the conduct of war, the control and disciplining practices highlighted by Foucault and taken further by, among others, Derrida and Dillon, suddenly achieve a magnification that requires us to take a close look at the dynamics at play in the discourse of NCW.

The technologization of discourse in the context of NCW

In the late 1970s, the Soviet General Staff prompted by their “anxiety of watching a more technologically advanced United States develop new technologies and move to incorporate them into new military systems”⁴³ began to speculate about the long-term consequences of such developments with specific reference to war and its conduct. Labeling it as a military-technical revolution (MTR), Soviet military thinkers focused closely on what they considered to be the key drivers of such a revolution. They identified informatics and precision-guided weaponry – employed at extended ranges – as being the critical factors that were changing the traditional reliance on quantity to that of quality.⁴⁴ They further foresaw the development of even more advanced technologies, such as directed-energy weapons which, they speculated, would be coupled with a highly efficient and diverse array of information processing technologies. The conclusions that they drew from their analysis of these developments and speculations were three-fold. First, they envisaged the future battlefield as being one where time would be increasingly compressed. Second, to be able to exploit this growing array of technologies – both the destructive weapon-platforms and the enabling and underlying informatics – a reconnaissance-strike complex (RSC) would emerge which would take the shape of a network in which information acquisition, analysis, fusion, and dissemination technologies would be interlinked with advanced and highly capable weapon-systems. Third, as a consequence of the development of this highly integrated network, the ability to engage a wide and diverse array of critical targets at extended ranges would become possible, thereby dramatically blurring the traditional frontlines/rearward areas distinction of the battlefield.⁴⁵

This Soviet perspective shared many common features with what

Admiral William Owens [Retd.], [former] Vice Chairman of the [US] Joint Chiefs of Staff, later wrote on the “system of systems” – a world in which the many kinds of sensors, from satellites to shipborne radar, from unmanned aerial vehicles to remotely planted acoustic devices, will provide information to any military user who needs it.⁴⁶

The RSC – as speculated and foreseen by the Soviet theorists – and the “systems of systems” (SOS) referred to by Admiral Owens shared two common elements. First, in their crudest formulations, they remained highly focused on technology and second, but more importantly, despite their obvious technological bias, both the perspectives clearly foresaw that the future of military strategy was centrally premised on information and its integration “with systems of weaponry and warriors for a seamless sensor-to-shooter flow. Linking these with capabilities of maneuver, strike, logistics and protection”⁴⁷ would be critical in exploiting the Observation, Orientation, Decision, Action (OODA) Loop of an adversary.⁴⁸ From this we can distill three critical issues that are of interest to us:

1. The systematic use of information as the generative principle of formation⁴⁹ and the key role that it plays in the future-oriented speculations of war and

its conduct as evidenced by the desire to create a seamless sensor-to-shooter flow.

2. The criticality of the role played by information, computing, and communication technologies evidenced by the increasing emphasis being placed on the network. As an aside, we should also note the distinct change of emphasis from individual and/or collectives of weapon-platforms to the network on and within which these platforms are now being situated.
3. The orientation to exploit the network to possess dominant battlespace knowledge and to experience full spectrum dominance.

These observations, which also form the core of the RMA and NCW thesis, are premised on the emergence of another phenomenon: the technologization of discourse.

Technologization, used here in its Heideggerian sense,⁵⁰ is “that relation to the world which treats every possibility in the world as material available for use and reuse for the revealing of the world.” It is the process of bringing the world to presence.⁵¹ Given that the world is revealed to us by language (understood in the widest of connotations), then it follows that language must also be understood as a technology, that is say, a “material available for use and reuse for the revealing of the world.” In this way, language, it could be said, may be understood as being technologized.⁵² The reduction of language to digitized code exemplifies the reduction of language into a fungible materiality whose ultimate value is in its utility to reveal the world in a calculable and programmable manner. This attempt to reduce language – by means of its technologization – is nothing else other than an attempt to attain mastery over language.⁵³ The project of digitalization, wittingly or otherwise, assists in this. Coupled with the disciplinary practices of institutions, which are also engaged in these very kinds of reductive activities (that is to say they are, by their exclusionary and prohibitive practices, also engaged in a process of technologization), the technologization of language and, by extension, of discourse has widespread and deep implications, especially in the context of NCW.

But before we explore these implications, let us lay down the “official” definition of NCW.

Network-centric warfare . . . are military operations . . . enabled by the networking of the force. Network-centric operations provide a force with access to a new, previously unreachable region of the information domain. The ability to operate in this region provides warfighters with a new type of information advantage, an advantage broadly characterized by significantly improved capabilities for sharing and accessing information. Network-centric warfare enables warfighters to leverage this information advantage to dramatically increase combat power through self-synchronization and other network-centric operations.⁵⁴

From this we can deduce that NCW, where battle-time plays a critical role, is primarily about:

1. speed of command and
2. self-synchronization – to meet the commander's intent.⁵⁵

Taken together, these which, in the NCW context but equally in other more traditional forms of warfare, co-constitute the Command and Control (C2) functions are highly complex factors and are of critical importance, particularly under battle conditions.⁵⁶ This is underscored by the fact that one of the central thrusts of the Clausewitzian theory of war was on the need to address the issue of chance and uncertainty which made itself manifest in the C2 functions.⁵⁷ In a more modern context, Martin van Creveld has highlighted the complications involved in the C2 functions of a modern-day military organization as evidenced by the experiences of the US Army in Vietnam.⁵⁸ A significant problem inherent in the discharge of C2 functions, particularly under battle conditions, is the undeniable fact that a commander must contend with virtually unlimited amounts of information, which not only complicates his decision-making abilities – which are set against a “tempo” (of operations) understood in terms of “getting inside” the OODA cycle of an adversary (alternatively, exploiting the enemy's OODA cycle) – but which also affects his ability to maintain surprise, increase lethality, and ensure survivability.⁵⁹ The effort to digitize the C2 environment is geared to address precisely this problem.

Digitization of the C2 environment would, it is speculated, enable a military force to improve its information-sharing capabilities, which would, in turn, enhance the quality of information and shared Situation Awareness (SA).⁶⁰ Collectively, it is hoped that these would increase the mission effectiveness of the fighting force.⁶¹ Digitization, in this context, has a limited connotation. It specifically refers to the “hardware” and “software” aspects of ICT. What remains unmentioned is the need to recognize the critical condition of the “wetware” that this digitization project also entails. If information is to be disseminated widely, richly, and liquidly, then the *texture* of information, as much as the content-value of information, becomes an important metric and under battle-conditions, even more so. The project of digitization in the NCW context, therefore, recognizes that the inherent disruptiveness of language (of communications, in more general terms) contributes to the wide variety of textures of information. In other words, it is being increasingly recognized and appreciated that varying textures of information do not allow for a seamless sensor-to-shooter flow.

As previously established, the technologization of language, aided and abetted by the project of digitization, works to reduce language to (1) allow for gaining a mastery over it, and (2) limit the conditions of possibility that language implicitly allows – a fact that is reflected in what, as we have seen, Dillon alludes to as the “incorrigible recidivism” of words and, by extension, of language. In the context of NCW, then, the project of digitization is oriented to bring about this uniformity and to establish a particular and very specific discourse, which would be geared to depict a common perspective (in NCW terms, a common operational picture or COP), alternatively a common world, which would be enmeshed within the confines of the network.⁶² The network, thus, would determine the world through the

agency of its peculiar institutional and discursive practices. If mission effectiveness, survivability, lethality, and surprise are to be achieved and maintained by exercising power over an adversary, then this exercise of power must be understood in terms of a struggle manifested in two ways. The first is the obvious struggle in the form of physical combat with the adversary and the second is the not so obvious struggle over the power of signification.

Dillon's insight, in this context, is revelatory. He writes, "in the age of information, network and code . . . the struggle over the power of signification is . . . the struggle over power. Whoever commands the power of signification embodies power."⁶³ By establishing power over signification, in terms of creating a COP, the underlying objective may be understood as being the attempt to standardize a particular texture of language and discourse. We find echoes of this in the world of ICTs where the WYSIWYG (the acronym stands for What You See Is What You Get) format is gaining ground faster than ever. WYSIWYG is simply the establishment of a "common operational picture." The critical element in this lies in identifying who or what determines what you see and how that determination is made. Recall, in this context, the Derridian insight of the strategic maneuver that Reason continually engages in to contain within itself that which lies outside its domain. It, therefore, comes as no surprise that Admiral Cebrowski should point to the significance of the migration of the global computing industry to the WINTEL (Windows-Intel) platform and to networked computing. Indeed, he goes further to note that "information 'content' now can be created, distributed, and easily exploited across the extremely heterogeneous global computing environment."⁶⁴ The implications of these examples highlight the world that the network strives to create and embody. By creating the world, then, the network, as we have seen, also establishes the very conditions of possibility. In other words, the network, by means of a specific set of discursive practices, aims to create and maintain a set of conditions wherein nothing outside the network should or would be possible.⁶⁵

It would be an error to assume that these radical developments occur and are occurring only within the US military establishment. In fact, a review of events shows that the impetus for this radical activity first emerged within the commercial sector, a fact which reiterates the blurring of the distinction between the civilian and the military sectors and ultimately of the frontline/rearward areas of the battlefield. As we have seen previously, the advent of the Information Age, it is claimed, has altered the nature of the world. Deleuze identifies this radical alteration when he notes the dispersive character of capital in the Age of Information.⁶⁶ Not surprisingly, commercial organizations, which are driven to protect, expand, and maximize profit, have led the way in adopting and deploying ICTs given that the shift from the traditional bricks and mortar economy to the digital marketplace has changed the way value is created. Our focus on the particularities of value creation is not solely based on the argument that the dynamics of the value creation process are domain independent,⁶⁷ and because of the increasing commonality that is emerging between the worlds of warfare and commerce.⁶⁸ It is also based on the fact that the value creation process points to the rise of particular forms of organizations and consequently of discursive practices.

“Creation of value is at the heart of creating competitive advantage.”⁶⁹ The concept of the value-chain, as described by Michael Porter, consists of the links and processes that transform raw materials (including information) into products that can be measured in terms of their value. Here value is understood as the positive differential between the selling price and the cost of raw materials taken together with the cost of transforming them into products.⁷⁰ Given that in today’s unfolding digital marketplace, the tempo of operations has significantly increased, the time-differential between the creation and erosion of value is, thus, becoming drastically compressed. This is what Admiral Cebrowski implied when he stated that “the new dynamics of competition are based on increasing returns on investment, competition within and between ecosystems, and competition based on time.”⁷¹ This necessitates, in the words of Hamel and Prahalad, the “reinvention of an entirely new competitive space . . . [where] . . . the goal is not to predict *the* future but to imagine *a* future made possible by . . . creating a compelling view of tomorrow’s opportunities and moving preemptively to secure the future”⁷² The resonance of this with the COP that we have referred to earlier is startling. What Hamel and Prahalad are alluding to (and in the most dynamic of global corporations, such as Microsoft Corp. and Google, we see this occurring with increasing regularity⁷³) is the virtual creation of multiple futures which, it could be added, are (and increasingly would be) enabled and controlled by a dense network of cutting-edge technologies which are reflective of the distinct discursive practices that are at work within this emerging competitive space. In this context, note the direct relationship between the acts of creating (futures) and that of securing (futures) – a fact attested to by the investigative projects of Foucault, albeit in the context of the disciplinary societies of the pre-Information Age era. Collectively then, the discursive practices that are evolving in the context of NCW, manifested by the technologization of discourse across civil and military boundaries, point to the emergence of a specific kind of strategizing. This, it is suggested, is occurring at multiple levels and simultaneously while being contingent on the phenomenon of networks.

At the edge of chaos . . .

The theories of complexity and non-linearity claim that they enable us to examine the workings of the natural world understood as a dynamic system. They “show us how dynamic systems . . . self-organize, how they are closely interrelated, and how they use feedback to regulate themselves.”⁷⁴ While a detailed examination of these theories and their conclusions falls outside the scope of this study, it may be worthwhile to examine three principal assertions that are central to them:

1. A phenomenon or a system is considered *complex* if it consists of numerous dimensions, which is indicative of an intricate mesh of intertwined processes and structures. As a consequence, a high degree of regularity in the dynamics of such a phenomenon or a system is discernable but only up to a point.⁷⁵
2. When phenomena or systems display “asymmetrically disproportionate”⁷⁶ dynamics – which indicates that the outputs of the system or phenomenon are

disproportionate to the inputs – they are understood as being *non-linear*. This is *contra* the nature of linear phenomena or systems where the outputs are proportionate to the inputs.⁷⁷

3. A system or phenomenon is considered as being *chaotic* when it displays non-linearity and when variations of initial conditions have massive non-repetitive consequences on downstream effects (in other words, displaying the butterfly effect). This seriously impedes, and in most cases denies, the ability to deploy predictive tools to model the behavior of such phenomena or systems.

Also fundamental to the understanding of complexity and non-linearity are complex adaptive systems, which are said to be “the engines that drive non-linearity.”⁷⁸ Complex adaptive systems are described as “dynamic systems [which] are able to adapt and change within, or as part of a changing environment . . . [it is] . . . a system closely linked with all other related systems making up an eco-system.”⁷⁹ These systems display a number of properties that encompass, among other things, the three points mentioned earlier. Notably, they also display the properties of aggregation, flows (alternatively, circulation), and diversity. Simply put, the property of aggregation refers to the intricate behaviors resulting from the aggregate interactions of lesser (or smaller) agents. Thus, in a complex adaptive system, the sum of the parts is not equal to the whole. The property of flows is best understood in terms of the multiplier effect and recycling. The multiplier effect is a “disembodied derivative” discernable at macro-levels of observation and to which a simple cause-effect relationship cannot be applied. In fact, at the micro-level, the multiplier-effect is, for the most part, invisible. “Recycling” is the movement and behavior of a diverse set of agents whose aggregate is greater than the sum of the agents. Together then, the multiplier-effect and recycling (i.e., the property of flows or circulation) underscore the adaptiveness of complex adaptive systems. This is because of the inherent dependency of the multiplier-effect and of recycling on the agents that enable these processes. This, in turn, is directly related to the diversity of the agents that are present within the complex adaptive system. The key feature of these agents is that they are entirely novel which, in turn, ensures that complex adaptive systems do not stagnate. They are constantly in a state of evolution and emergence. Moreover, these agents are dispensable and their dispensability remains contingent on their being able to maintain their evolutionary stability within the complex adaptive system without posing a critical threat to the system’s well-being. Their failure to do so ensures their removal and replacement by a different, yet similar, agent better adapted to achieve the evolving levels of stability of the complex adaptive system as a whole.⁸⁰

From this, two inferences can be drawn. First, complex adaptive systems are open systems. They share an intricate and delicate relationship with a host of other systems all of which collectively constitute a particular eco-system. Moreover, particular eco-systems are open as well. They too share economies of relations with other eco-systems thus rendering a rich lattice-like texture to what is called the global system. And second, the inter-relationships between agents within complex adaptive systems are critical in generating the inherent dynamism of such systems.

This, in light of Lorenz's butterfly effect, has a cascading effect on the system, which not only increases the complexity and non-linearity of the system, but also enhances its adaptive ability to local and global environments. At the macro-level therefore, the global system has come to be envisioned as a gigantic complex adaptive system, which is constantly evolving and emerging.⁸¹ It is this deep and intricate intertwining of the infinite relationships that characterize complex adaptive systems and the ecosystems of which they are a part of that gives a materiality to the complexity and non-linearity of the natural world. This, however, is not the same as identifying the natural world as being random.⁸² Thus, one can say, "complexity lies somewhere between order and disorder . . . [where] . . . some characteristics of systems . . . are neither highly ordered nor completely random."⁸³

As we have seen, in addition to asserting that the "logic of war in the abstract, with its limitless escalation of cost and effort, contradicts human experience . . .,"⁸⁴ Clausewitz also insisted that war is "not the action of a living force upon a lifeless mass (total nonresistance would be no war at all) but always the collision of two living forces."⁸⁵ For Clausewitz, war was a dynamic (and consequently non-linear) interaction between two or more agents, which was marked by fluidity and a condition of flux. Further, Clausewitz noted the variability of the strength and speed of the conduct of war – tempo of operations – and the expenditure of energy that such actions entailed. Recall here the characteristics of the complex adaptive system. Previously, we had identified the interaction between the agents within a complex adaptive system as being a key feature of such systems. Clausewitz's martial formulations, while bereft of the advantages that accrue to us in terms of our exposure to the "new sciences," bear a striking similarity with the complex adaptive systems as we understand them today. The other important element of Clausewitz's theory of war, which we have already encountered, was the concept of *Frikion* regarding which he had famously said:

[E]verything in war is simple, but the simplest thing is difficult. The difficulties accumulate and end by producing a kind of friction that is inconceivable . . . this friction, which cannot, as in mechanics be reduced to a few points, is everywhere in contact with chance, and brings about effects that cannot be measured.⁸⁶

This emphasis on friction (*Frikion*), as we have seen, was placed by Clausewitz at two levels. At one level, it was recognized in context of one's own army and in the conduct of war. At another level, it was recognized at the macroscopic level of war itself. This latter recognition of friction – at the general level of war – we suggested was indicative of Clausewitz's recognition of the subtle and immersive condition of complexity and non-linearity (alternatively, of chance and uncertainty) that contextualized the problematization and theorization of life, war and the conduct of war.⁸⁷

While examples of commanders being attentive to the friction of the battlefield are littered across the annals of history, one of the more recent and explicit instances of how to operate in conditions of complexity and non-linearity – specifically on

the battlefield—is visible in the German school of maneuver theory. Born out of the need to break the deathly stalemate that prevailed at the Western Front during the First World War, German military thinkers developed the doctrine of infiltration tactics.⁸⁸ This represented an almost philosophical solution to the problems of the stalemate imposed by trench warfare.⁸⁹ The full implications of this doctrinal change, however, only became visible in the Second World War where, by combining the tactics of infiltration with the developing technologies of the tank and combat aircraft, the Germans were able to pioneer a method of war that appeared to thrive on the very edge of chaos, i.e., the space where complexity and non-linearity hold sway.

Recognizing the destabilizing factors involved in operating within such a space, the German military thinkers devised and combined three operational conditions. The first was the technique of *Auftragstaktik* (literally, mission tactics), which involved creating mission-type orders.⁹⁰ This gave lower echelon commanders and troops the freedom and flexibility to devise the particular methods by which their assigned tasks could be carried out, with the higher level commanders restricting themselves to exercising directive control. The second technique was the identification of the *Schwerpunkt*. “Originally this term identified the point along the enemy lines at which the attack would focus for a breakthrough . . . [but it also implied] . . . the object of focus for the efforts of all subordinate and supporting troops.”⁹¹ The third technique was the identification and exploitation of enemy weaknesses while avoiding their strengths, better known as the expanding torrent method.⁹² Taken together these techniques (commonly recognized as *blitzkrieg* or lightning war) were geared to exploit what Col. John Boyd later referred to as the OODA cycle of the enemy.

Boyd’s OODA cycle theory was instrumental in highlighting the iterative nature of war. “It recognize[d] that the result of actions [was] not just the direct effect on the adversary, but his adaptation to our actions, and his subsequent actions [or at least our observation of them] become part of the next input.”⁹³ The resonance of this with the original formulation of Lorenz’s butterfly effect is not accidental. This sensitivity to initial conditions that was so starkly manifested in the OODA cycle of combat was nothing less than the growing recognition and reaffirmation of the original Clausewitzian identification of the immersive context presented by complexity and non-linearity. Boyd’s theory of the OODA cycle, which elegantly identified this state of affairs, thus pointed to not simply the fact that warfare—the conduct of war—was, in all respects, a complex and non-linear activity, but also that war itself was a complex and non-linear phenomenon. This recognition led to radical changes being introduced in terms of force-structure and planning and organizational re-orientations that would make the necessary instruments of war more responsive to the inherent instability of war and the battlefield.

The interesting thing to note in the original formulation of Boyd’s OODA cycle is the role of information. While ostensibly the OODA cycle was concerned with the issue of directive control, which was, in the first instance, a tactical decision-making model,⁹⁴ a closer examination, however, suggests that the generative

principle of the OODA cycle is information, a point which Boyd himself noted.⁹⁵ The development of the theories of information and cybernetics confirm this. Claude Shannon's work in the field of Information Theory, in this context, is illustrative. The revolutionary elements of Shannon's contribution was the invention of the source-encoder-channel-decoder-destination model⁹⁶ – a process-flow which we find extensively used in the work of Norbert Wiener who, during the Second World War, worked on guided missile technology, and studied how sophisticated electronics used the feedback principle, which resulted in the development of the field of Cybernetics.⁹⁷ The criticality of this, however, remained underestimated and the propensity for using the OODA Loop simply as a tactical instrument on the battlefield remained in vogue for a while. To that limited extent, the increasingly complex and non-linear character of war was recognized. The tendency to quantify the battlefield and war, however, remained paramount.⁹⁸ This paradox of the gradual recognition of the increasing importance and relevance of information, its constantly changing dynamics and the tendency to quantify information using statistical and systems-theoretic models was reflected in both the organizations responsible for the conduct of war and also in the designing of the pathways through which information would circulate.

At this point, two problems emerged. The first was the problem associated with quantifying information thus making an artifact of something that is inherently dynamic. The second related to the diagramming of the network through which information is expected to flow. With the problems thus stated, the task of fashioning adequate responses to them began to take shape. While the theories of complexity and non-linearity provided the context to the statement of the problems, the network concept provided the organizing principle around which the some of the still nascent responses have emerged.

On networks

Two parallel events catch our attention as we sift through the linear history of the ARPA and early network computing. The first was the assignment of Dr J. C. R. Licklider to the Information Processing Techniques Office (IPTO) and the second was the work of Paul Baran within the RAND Corporation. Licklider, with his keen perception of the sense of community that existed between users of the first time-sharing computer systems, began to think about a network being established between the group of computer specialists who had gathered around at the IPTO. Licklider's premise was that "men will be able to communicate more effectively through a machine than face to face."⁹⁹ Uncannily, he nicknamed this network of computer specialists the Intergalactic Network.¹⁰⁰ Simultaneously, a group of scientists from Massachusetts Institute of Technology (MIT) and the British National Physical Laboratory were working on the dynamics of networks. Their primary motivation was to devise more efficient methods by which the expensive computers of the time could share resources. This emphasis on communication led, by 1969, to the linking of four computers across the US located at the University of California at Los Angeles and Santa Barbara, University of Utah, and Stanford

University. This was known as the ARPANET, which was the original seed of today's Internet.¹⁰¹

The potential threat of a surprise Soviet nuclear offensive had, simultaneously, spurred the USAF to fund, among other things, a research project to investigate the building of a schematic design for a national communications network, which could survive such an attack.¹⁰² In 1964, Paul Baran, working from within the RAND Corporation, published a series of papers which addressed this problem.¹⁰³ Baran's proposal outlined the principles of a new network which was to be built for maximum robustness and flexibility. This new network, which would have no central authority, was referred to by Baran as a "distributed communications network."¹⁰⁴ Baran recognized that the communications systems of the day were heavily dependent on centralized control centers, which made them extremely vulnerable to interdiction. Thus, an attack on any one of the centralized control centers would bring down the network.¹⁰⁵ Baran's idea was to create a web of computers and/or other communication devices which would be linked by transmission lines and which would have no centralized control centers. To this end, he identified three generic types of networks which he listed as centralized, decentralized, and distributed networks.

Baran observed that a centralized network could be destroyed by targeting its node while a decentralized network, despite being more resilient than a centralized network, could also be brought down by targeting a finite number of nodes. The distributed network, on the other hand, given the absence of nodes of critical importance, was the most resilient of the three network designs. This he attributed to the element of redundancy built into the distributed network. Redundancy, in this context, refers to "the average number of links per element" (alternatively, node).¹⁰⁶ Baran summarized the future developments of networks in the following words:

We will soon be living in an era in which we cannot guarantee survivability of any single point. However, we can still design systems in which system destruction requires the enemy to pay the price of destroying n of n stations. If n is made sufficiently large, it can be shown that highly survivable system structures can be built— even in the thermonuclear era. In order to build such networks and systems we will have to use a large number of elements. We are interested in knowing how inexpensive these *elements* may be and still permit the *system* to operate reliably. There is a strong relationship between element cost and element reliability. To design a system that must anticipate a worst-case destruction of both enemy attack and normal system failures, one can combine the failures expected by enemy attack together with the failures caused by normal reliability problems, provided the enemy does not know which elements are inoperative. Our future systems design problem is that of building very reliable systems out of the described set of unreliable elements at lowest cost. In choosing the communications links of the future, digital links appear increasingly attractive by permitting low-cost switching and low-cost links.¹⁰⁷

But Baran's work had another rather significant result. He recognized that the distributed network would also need to have an "intelligence" to survive a massive attack. He conceptualized the distributed network as having no preset path for messages to travel. Instead, messages (information) would rely on computers to find the most optimal route to their destination. This, Baran contended, would be accomplished by each message being broken into a number of blocks and having computers located at each node which would maintain a "routing table." The routing table would record at what speed recently sent message-blocks reached their destination. The computers would thus be able to make intelligent decisions by rerouting messages, in their block forms, along pathways that would bypass the nodes that an enemy attack had destroyed. Once the message-blocks reached their destinations, they would be reassembled and thus the message would be considered transmitted.¹⁰⁸ In net effect, what Baran was suggesting was that the network would be comprised of a number of unmanned digital switches, which would possess a self-learning capability within a changing environment. The premise of Baran's speculations and later work was starkly reminiscent of the complex adaptive systems that we have had occasion to examine earlier.

In brief then, we find that the development of the network (characterized by the ARPANET and in its expanded form, the Internet) was based on two critical concepts. The first was to understand the issue of connectivity as being a lattice of links which would have no singular or critical element or node and wherein messages would be broken into smaller blocks or packets. The second was to recognize that the key to the survivability of the network depended on its having an integral *machinic* or native intelligence which would enable the network to adapt to changes in the environment of the network (such as the breakdown or destruction of any node within the network) without compromising the core efficiency of the network. However, as the original ARPANET expanded into the Internet, a few discrepancies were found in the original formulations as suggested by Baran.

In 1998, by sending out a large number of information-packets, a topology of the Internet was created and it was found that unlike Baran's theorizations of decentralized and distributed networks that would have no centralized nodes or elements, the Internet had organized itself into a hierarchical network that Baran had originally dismissed in favor of the distributed network.¹⁰⁹ The Internet did not seem to conform to the accepted model of random connectivity. The topology indicated that the Internet had yielded a connectivity map that was, as Albert-Laszlo Barabasi called it, scale-free.¹¹⁰ Simply put, scale-free networks include many very connected nodes or hubs of connectivity that shape the way the network operates. The ratio of very connected nodes to the number of nodes in the rest of the network remains constant as the network changes in size.¹¹¹ Barabasi's investigations were even more startling as they dealt with the World Wide Web (W3), which unlike the Internet is not hardware-based. The W3, which is a vast network of web-pages (essentially software) connected by hyperlinks hosted on the hardware-based Internet, is growing at an exponential rate.¹¹² From this a number of inferences can be drawn.

1. In keeping with the core intent that was first expressed by Licklider, networks were and remain centered around the principle of communication. This is applicable to the more hardware-based network, such as the Internet, and for the W3, which is primarily software-centric.
2. Networks are able to maintain their stability and monitor themselves by a process of self-organization and self-generation. In other words, networks work on the basis of an "insatiable need."¹¹³
3. Networks depend on multiple feedback loops, which are critical in maintaining their condition of equilibrium. In addition, the time taken by the feedback to loop through its "circuit" is a critical factor in determining the effectiveness of the loop and its "learning capability."
4. Networks organize themselves around nodes or hubs of connectivity, which are centers with a high density of links.

Consequently, we can identify a new trinity arising in the Age of Networks—Speed, Sharing, and Decentralization—underpinned by the "native intelligence" of networks originally propounded by Baran.¹¹⁴ The conceptual foundations of NCW, thus, lie not so much in the hardware aspects of the network, rather, they are based on this trinity that we now see emerging from the rise of networks in the Information Age. The rise of networks also points to one other singular fact. Grosch's Law, which states, that doubling the cost of a computer results in multiplying its computing power four-fold, has now been inverted.¹¹⁵ Consequently, by distributing (alternatively decentralizing) and sharing tasks, smaller computers and workstations, organized as clusters, have been able to perform tasks that were limited to high-end super-computers at a much lower cost than hitherto possible.¹¹⁶ Taken together, the impact that this has had not only on the conduct of war, but also on the concept of war, has been immense.

On netwars

Command (and Control) has always been the most complex and critical of military functions. It is a function "that has to be exercised, more or less continuously, if the army is to exist and to operate."¹¹⁷ In this connection, it is interesting to note that the more familiar C2 designation (Command and Control), as we know of it today, was not used until the end of the Second World War.¹¹⁸ There are two possible explanations for this: "one argues that it [C2] derives from the proposition that 'one commands men, while one controls machines' . . . the other explanation suggests that when a situation reaches a certain level of complexity (or chaos), people must concentrate on control."¹¹⁹ While numerous authors and commentators have offered their individual perspectives on this baffling phenomenon, suffice it to say that the marriage between the command function and the control function summarizes the totality of activities that a military commander must engage in. It encompasses (1) Combatant Command (COCOM), (2) Operational Command (OPCOM), and (3) Tactical Command (TACOM).¹²⁰ The common elements that bind these three activities are:

1. Information acquisition
2. Information analysis
3. Decision making
4. Information dissemination
5. Feedback reception.

The US military experience in Vietnam, in this context, is instructive. Despite developing and deploying one of the most sophisticated communications and command and control networks, the US military command floundered. The problem, when analyzed, pointed to the fact that while the sophisticated networks operated at their peak, the benefits derived from them were poor due to, among other things, the centralizing tendency that was prevalent in the US military establishment of the day.¹²¹ Aside from the fact that the US military had deployed a conventionally structured force to combat a patently asymmetric enemy, the friction of war ensured that Murphy's Law applied, more often than not, to the C2 infrastructure thus resulting in mounting difficulties with communicating information to people at a variety of levels along the command chain. The lesson learnt was that when "dealing with a battlespace permeated with fog and needing to develop plans that must survive the worst of Murphy,"¹²² a radically different methodology would have to be developed which would ensure a drastic reduction, if not the elimination, of the fog of war.

The emergence of low-cost computing and increasingly robust networking capabilities opened up a number of alternatives which has enabled the re-conceptualization of the C2 function. Thus, for example, while traditionally, the C2 function was concerned with the management of forces and assets, sophisticated networking capabilities have allowed for the management, in a decentralized manner, of the battlespace within which the management of information has taken precedence over all other activities. The management of the battlespace is an interesting development in the NCW context. It is not merely limited to the management of one's own forces. It also includes the management of adversaries and allies in terms of their perceptions and actions. Taking the battlespace management concept even further, networking capabilities have also enabled the conceptualization of more than one battlespace within a single theater of operations. These developments are based on the perception that the power coefficient or multiplier is positively affected by the effectiveness of linking mechanisms and processes.¹²³ As a consequence, the traditional C2 function, which was executed within a hierarchical structure, is now being increasingly (re)conceptualized as a decentralized and contingent structure, which is capable of forming, dissipating, and re-forming as per situational requirements. This contingent nature of the emerging networked C2 structure warrants a brief discussion, for it is here that the key concept of NCW is highlighted.

Given that the volume and content-richness of information on the modem-day battlefield has exponentially increased, proponents of NCW are increasingly contending that there is an overriding need to configure

a set of battlespace entities and a set of interconnections that can take full advantage of the increased amount of information available, turn this

information into knowledge, and generate increased combat power. In other words, leverage shared battlespace awareness to allocate, assign, and employ assets and then modify these allocations, assignments, and employments as awareness of the situation changes.¹²⁴

The overt intent is to achieve battlefield results which approach a maximum optimal level without experiencing the travails of a centralized C2 structure. Further, the objective, under ideal conditions, is also to ensure that such achievements are marked by an inherent flexibility in terms of force design, deployment, and ultimately of the intended effects of such deployments. To be able to achieve this, battlespace entities are increasingly envisioned as consisting of actors who, collectively and individually, can sense, decide, and act. Thus, to be able to maintain cohesion within the battlespace entity, the interconnectedness of its constituent actors is of paramount importance. However, the precise configuration of the interconnectedness between the actors would not be predetermined thus contributing to the very high degree of flexibility in the actions of the battlespace entity. The point to be noted in this conceptualization of the battlespace entity is its contingent nature which reflects on the individual attributes and functional abilities of the battlespace entity which would be appropriately highlighted as per particular situational requirements.¹²⁵

Recall in this context Baran's notion of the native intelligence of distributed networks. As we have seen, Baran had theorized that in the event of an attack on the network and the destruction of a number of its nodes, the network (by means of computers which would maintain their individual routing tables), would be able to direct and redirect the traffic of messages in their block or packet form by choosing the optimal flow-path. In other words, save a complete destruction (which, it should be noted, is hypothetically possible), the network would self-synchronize to contend with emergent conditions. If one understands the functional flexibility and the sensitivity to the external (and internal – based on the feedback loops) conditions of the constituent elements of a battlespace entity as being reflective of the native intelligence of the network of the agents within the battlespace entity, the similarity between the behavior of distributed networks and the battlespace entities envisioned in the context of NCW is striking. It is also indicative of the "algebra of need" that is endemic in the networked phenomenon.¹²⁶ Thus, one could say that the native intelligence of networks computes and re-computes, ad infinitum, this algebra of need (in terms of information acquisition, processing and dissemination), which sustains the integrity of the network, but not necessarily its structure, which co-evolves in tandem with its constantly changing environment. In this way, networks are, so it is theorized, able to maintain and regulate themselves. More importantly, in the context of the algebra of need, networks are also able to – indeed compelled to – expand infinitely.

Further, it is important to note that we are not referring to a single battlespace entity. As conceptualized by the leading NCW theorists, there would be a multitude of battlespace entities which would lie dormant in the global battlespace and which, with the emergence of particular situations, would become active. This, of course,

implies that individual battlespace entities would also be seamlessly interconnected between themselves – in a plug-and-play fashion – which, in turn, would enable the gaining of a clear picture of the situational requirements. From this we can infer that a collection of such battlefield entities gives rise to a lattice of networks which aims to cover the entire battlespace. The network that the proponents of NCW speak of is thus more a mesh of networks rather than a single network. The key issue, however, is not the battlespace entities per se, but the links between the actors of a battlespace entity and the links between battlespace entities, which allow for a smooth and seamless interconnection resulting in a heightened degree of awareness of the battlespace.¹²⁷ Collectively, these links would be instrumental in forming a topology of the battlespace which would be comprehensive (in the sense of spanning the information, cognitive and physical domains) and, more importantly, dynamic. In other words, under optimal conditions, nothing would lie outside the networked battlespace. The pervasiveness of this is heightened even more if we factor in the emergence and viral spread of mobile computing and wireless networks. Indeed, the advent of wireless networking has created a situation where “total immersion” has become an everyday phenomenon. In the context of war and its conduct, the mesh of wireless networks exponentially increases their reach, depth, and functionality.¹²⁸

It is pertinent to note that while we have been discussing the networked phenomenon in the context of the battlespace, it is not limited to the military environment. With the explosion of information networks, we find that the nature of information is such that the more that is produced, the more co-relations and cross-references can be made.¹²⁹ Consequently, the application of the network phenomenon in, what is assumed to be, the purely civilian sector, especially in the fields of commerce and medicine, is also increasing by leaps and bounds. Indeed, it can be argued that the first material (in this context “material” is understood as being commercial in the sense of profit-making) manifestations of the network phenomenon can be found in the commercial sector.¹³⁰ Given that the network topology that characterizes the military environment and the allegedly civilian sector share an astonishing similarity and the fact that the military environment shares the core dynamics of the civilian world (this being one of the effects of the Age of Information – recall in this context Porter’s value-chain hypothesis), the net result is that the mesh of networks that we see emerging in the context of the battlefield also extends, in more ways than one, globally.

Machinic war

Steven Metz points out that “[a]s it developed during the first Clinton administration, the RMA was both a philosophy of strategy and, eventually, a framework for the evolution of the military.”¹³¹ Further, Metz points out, with specific reference to the American context:

[B]y embracing the military revolution, the United States could sustain and even increase its military advantage over potential competitors. A military

revolution based on information technology also appeared to offer a solution to another problem American strategists faced: sustaining the political usability of force in an era of diffuse threat.¹³²

For our purposes, there are three points of interest in what Metz has to say. First, note how though Metz refers to the “evolution of the military” that, at least in the US, is taking place within the framework of the RMA and its attendant theories, there is no indication that this evolution is occurring outside the political. Indeed, it is assumed – without question – that regardless of the framework within which the military is said to be evolving, the evolutionary process is taking place within a political context thereby affirming the essentially Clausewitzian imagination of war being subject to the political. Indeed, Metz seems quite emphatic in asserting that the informationalization of war (as a consequence of the RMA and of the emergence of the theories of NCW) may indeed prove to be a saving grace for American strategists in ensuring the political usability of force. Metz, of course, is referring to the ability to conduct precision strikes, surgical operations and rapid campaigns thereby lessening the extent of primary and collateral damage that, more often than not, undermines popular political support for any war. In other words, despite the progressive efforts to reduce the extent of damage incurred while prosecuting war, to combat and contain the effects of chance and uncertainty, to create, deploy, and manage complex and adaptive entities within a variety of battlespaces, and to (under ideal conditions) cast a globally expansive mesh of networks on and through which effects – kinetic and otherwise – may be created, expressed, and experienced, the *concept* of war that underscores this effort remains akin to that which informed the Clausewitzian theory of war. In this sense, what Metz is stating parallels that which the majority of the theorists and strategists of war in the twenty-first century assert, that NCW is not a signature of a “new” concept of war; rather, it is nothing more than a technological expression of the canonical Clausewitzian theory of war. This is nothing other than a reaffirmation of the assertion made by the tradition-bound theorists of war and combat that while the character of war may change, the fundamental principles of war remain sacrosanct.

Second, as we have seen, since the Age of Enlightenment, the problems on the battlefield posed by chance and uncertainty have bedeviled military theorists. With the advent of Clausewitz, however, a highly sophisticated conceptual framework emerged which attempted to, if not contain, at least address these twin disruptive phenomena. This led Clausewitz to assign the task of operating in the fog and friction of war to the Genius. It is only with the emergence of the theories and doctrines of NCW that the effort to actively engage with chance and uncertainty on the battlefield came into its own. Of course, this does not, and should not, suggest that chance and uncertainty have been or even face – at least in the medium-term – the prospect of being banished from the battlefield. Nevertheless, what is interesting about the NCW project is that with the concerted focus on addressing the problems posed by chance and uncertainty in strategic, operational and tactical terms, the functions hitherto entrusted to the Genius are being progressively informationalized and distributed. It would appear that the native intelligence of

networks – as Baran theorized – is being gradually developed to take over the functions of the Genius.

Third, Metz's observations clearly suggest that the principle strategic challenge, particularly for the theorists and strategists of war in the twenty-first century, is to work out the ways and means by which diffuse threats – which Hardt and Negri refer to as the Wars of the Small and the Many – may be addressed. Though Metz remains beholden to the political context of wars (conventional or otherwise), the import of this challenge lies in the subtle shift that we had identified in the QDR 2006 – the shift from nation-state threats to decentralized network threats – and of the proliferation of wars between nation-states that are *not* formally at war with each other. It will be appreciated that the *technics* (which necessarily include the theory and practice) of NCW which, as we have seen, prioritizes flows of information and is backed by an increasingly diverse array of data acquisition, analysis, and communication systems, seem to presume precisely these emerging threat-perceptions. If we set aside the fact that some of the so-called belligerents in the Wars of the Small and Many do not profess to have an overt political objective, when considered in terms of the flows and processes of information, the emerging face of war seems to elude the grasp of the political. In other words, the emerging NCW paradigm – even in its base functionalist sense – is increasingly tending to recognize and represent threats in informational terms, that is to say in terms that are non-human.

It is in this specific sense that an even more fundamental evolution of war is taking place and it is not simply reflected in the changing character of war, but also in the *concept* of war. This transformation of the *concept* of war, in the first instance, is one which leaves aside the political and focuses principally on the flows of information, and of effects conducted across a diverse set of networks. As we will see, these are the faint glimmerings of a *machinic war* wherein, to paraphrase the words of Admiral Cebrowski, removing the human from the battlefield can change everything.

4 Theorizing war in the Age of Networks

“[T]oday, we are inclined to see nearly everything in terms of connections and networks.”¹ This has led K. W. Jeter, in the novel *Noir*, to observe that the problem is not how we get onto the network, but how do we get off it.² Thus, being connected implies – humans connected to machines, machines connected to machines, humans connected to humans, humans connected to environments, machines connected to environments, environments connected to environments, and so on. In other words, “being connected” increasingly means to be enmeshed in a plethora of material and non-material networks.³ It is in this context that Licklider’s original conception of a network for communication has taken on a global meaning. Not only does it include the network of communication devices (including the Internet and the W3), it also includes the very potentiality of events. Recall in this context our discussion on how the conditions of possibility are limited by the project of digitalization, which involves specific processes leading to the technologization of language. The networking of events (with events increasingly occurring within the mesh of networks) thus pertains to all signs/significations, including information. In turn, what this implies is that increasingly events and the grounds of their emergence share a common condition. In this sense, they are networked.⁴

The core conceptual foundation of NCW, therefore, arises from the idea that if the very conditions of possibility are enmeshed within networks, then war may be understood as being a phenomenon whose possibility, in terms of its emergence and conduct, is immanent within this mesh of networks. To understand this as being a material manifestation of the limitation of war would be an error. Contrarily, war within such a framework displays a pervasiveness which is global and local. In other words, the mesh of networks not only facilitates the conduct of war, but it also ensures that the potentiality of the emergence of war is always at the threshold of actualization.

A new strategic commons: A wide-angle view of NCW

Martin Libicki, one of the leading theorists of NCW, in the context of strategic and tactical sensors, writes:

Even with stealth, everything ultimately can be found. All objects have mass and thus gravity. Every object moving in a medium creates vortices and must

expend energy to do so. If nothing else, objects of a certain size have to occupy some space for some time. A set of sensors placed sufficiently close together can, in theory, eventually trap everything by getting close enough. *A line of sensitive receivers placed close together will find its line-of-sight to a beaming object cut if a bomber – no matter how stealthy – rolls past . . . sensors of certain minimum discrimination placed close enough together can, at some epsilon, catch anything.*⁵

The implications of Libicki's words are clear enough. While being limited to battlefield sensors, Libicki's ruminations also hold a resonance at a meta-level. Having previously established that the conditions of possibility are being increasingly bounded by the network or a mesh of networks, then it is not impossible to conceive the possibility of conflict, manifested as war, as being present (in its potentiality) at every (dynamically shifting) point within the mesh of networks. In this context, Libicki's words move from the specifics of strategic and tactical battlefield sensors, to a wholly different register. The ability (or, in the most extreme cases, the desire) to "catch anything" within the crosshairs of a Grid of sensors is, within the conceptual framework of NCW, indicative of the emerging character of war in the Age of Networks. Recall in this context, the RSC as conceived by the Soviet Military thinkers and Admiral Owens' formulation of the SOS.⁶ These early conceptualizations of networked warfare were, in retrospect, rather prescient about the trajectory that NCW would eventually take. As we have already seen, the RSC and the SOS were envisioned as being a wide network of intelligence gathering, fusion, analysis, and dissemination assemblages, which would be linked with advanced weapon-systems to enable striking at a diverse array of targets with increasing precision. The more mature formulations of NCW take this a number of steps forward. In the process, firepower, weight, and mass, which are the traditional metrics of warfare and of the instruments of war, are being increasingly replaced by an evolving set of "concepts of operations" that are designed to operate (primarily) at the informational and cognitive domains.

Further, as we have seen, the two critical problems at the core of the NCW project were: (1) How to quantify information, and (2) How to optimize the design of the network that could guide and direct the flow of information seamlessly and in real time. It was not long before attempts were initiated to address these two problems. It was recognized, even at the height of the Vietnam War, that the extreme fluidity and pace of military operations required an organizational set-up which would resemble a decentralized and flattened structure. This was nothing but a re-recognition of the salient principles of the *Auftragstaktik* practiced by the combat units of the Imperial German Army, and later – on a much larger scale – by the *Wehrmacht*. The critical element, however, that aided the process of initiating the first steps to conceptualize war and the battlefield as a network-centric phenomenon was the unprecedented rise of ICTs.

The Vietnam War highlighted, among other things, the pitfalls associated with the tendency to centralize C2 functions and the operational problems related to resource pooling.⁷ The stark lessons for global military planners were two-fold.

The first was the recognition that the modern-day military machine was a much larger and infinitely more complex entity than ever before and thus it required a huge logistical back-up,⁸ and the second was that to make such a large military machine functional, at acceptable levels of efficiency, information was a necessity. The last point was a paradoxical one. The US Army, in Vietnam, had created one of the most sophisticated military information networks in the world, but the net result was the emergence of a term that would begin to resonate with increasing frequency in the following years – information overload – a phenomenon which had virtually choked the US military organization.⁹ From the 1970s, with “the advent of battleworthy precision-guided munitions, the higher plateaus reached by electronic warfare in close association with new methods for intelligence, surveillance, and target acquisition, and the development of a global system for controlling US strategic and tactical forces,”¹⁰ a radical shift began to occur not only in the instruments of war, but also in the way war and its conduct were being (re) conceptualized.

It is claimed that the advent of the Information Age has altered the nature of the world by:

1. changing how wealth is created
2. altering the distribution of power
3. increasing complexity
4. shrinking distance around the world
5. compressing time.¹¹

This radical alteration of the nature of the world finds its materiality in the changing dynamics of the global economy driven by the globalization of the circulation-paths of capital and labor. Simultaneously, the relentless technological drive led by the ubiquitous growth-rate of ICTs is permeating the very home and hearth of most of the Western world, and is moving at a fast clip in other regions of the globe. One of the major consequences of these seismic changes is the faster evolution and emergence of threats – in terms of their identity, nature, and diversity. Threats, in the Age of Information, are becoming more anonymous and, therefore, more dangerous. Given this, the complexity and non-linearity that, as established by the “new sciences,” is a characteristic feature of the world, has also increased exponentially. Since war and its conduct is a product of its age, naturally, its character and conduct in the Information Age, buoyed by the concomitant technological advances, are also morphing.¹²

The key enabler in this new age is thus not only information, but also the phenomenon of *being in-form-ation*. As a consequence, it is held that the “changes in technology and the integration of those changes into weapons, concepts, and organizations means that the role of information relative to more-conventional [sic] measures of military strength is likely to change.”¹³ The influence of information, however, is not limited to the changes that it brings when meshed with weapon-systems, concepts, and organizations. A much deeper change is occurring and this is evident when we note precisely how and where the battlespace is being

reconfigured and located. While in the Industrial Age, the battlespace was still located at the site of the physical, in the Information Age, the battlespace is located across three domains of the physical, cognitive and the informational.¹⁴ The widening of the battlespace across these three domains is a signature of the dramatic impact that ICTs are having on the very economics of information.¹⁵ Consequently, the traditional choice between information reach and information richness has, to a large extent, collapsed due to the emergence of technologies that enable the distribution and sharing (collectively, extending the reach) of information without compromising the richness and depth of the information being shared.¹⁶ This development has its reciprocal effects, albeit in a non-linear manner, in the cognitive and physical domains in the form of responsiveness, adaptability, and flexibility.¹⁷ The impact that this has had on warfare is tremendous. Thus, for example, the extension of the battlespace across the domains of information, cognition, and the physical is indicative of the non-dimensional nature of the battlespace. It is non-dimensional in the sense that it is an increasingly cultural and creative site defined by information, perception, cognition, and belief.¹⁸

The emerging “reality” is that this reconfigured battlespace is the most complex battlespace of the twenty-first century and, as such, it defines the new “strategic commons.”¹⁹ Taking the cue from Mahan’s concept of the “wide commons” of the high seas,²⁰ the new “strategic commons” is the complex domain of information and cognition characterized by low-cost entry barriers thus putting it within effective reach of non-state actors. And, given that, in this sense, it closely resembles a complex adaptive system, the emerging battlespace is highly complex, non-linear, and co-evolving with the minutest changes that take place within the global networked ecosystem.

The key issue concerning war in the Information Age is the notion of “information superiority.” Simply put, this is the

state of . . . [relative advantage] in the information domain that is achieved by being able to get the right information to the right person at the right time in the right form while denying an adversary the ability to do the same.²¹

While this may, to some, be solely understood in terms of the competitive advantage gained by one force over another in terms of information and communication capabilities, the critical aspect of information superiority has more to do with the relationship between information capabilities and needs. Traditionally, military organizations (across the various hierarchies of command) have had to strike a compromise between information capabilities and needs due to the limits placed by the available technologies.²² Increasingly, however, ICTs are allowing for the delimiting of this relationship and are enabling not merely more choices, but a tailoring of such capabilities relative to the operational necessities. This, in turn, is resulting in the transformation of existing organizations to adapt to the emerging conditions and in the rise of new organizations which are geared to operate within such emergent conditions. An example of the latter is the Office of Force Transformation (OFT) in the US Department of Defense.²³

The emergence of the OFT is premised on the notion that a new metric, which is emerging as a result of the “changing character of war,”²⁴ necessitates a non-linear, yet deductive, form of thinking. Consequently, the OFT is geared to provide both the impetus and the results of this kind of thinking in terms of the co-evolution of concepts, processes, organizations, and technologies and since, like complex adaptive systems, change in any one of these areas necessitates change in all, the OFT is meant to identify, leverage and even create new underlying principles for the way things are done.²⁵ This highlights the co-evolutionary nature of the OFT. The OFT thus, is not a standard bureaucratic organization. Rather, it is an organization that is network-centric – meaning that it is a dynamic organization which co-evolves in tandem with the concepts, processes, organizations and technologies that it purports to identify and exploit. In this light, the OFT appears to be a truly revolutionary organizational entity for it is one that is singularly tasked to undertake the transformation of force by working “to identify and leverage new sources of power.”²⁶ In this sense, the OFT is the organizational equivalent of a complex adaptive system and a forerunner of the network-centric organization that is increasingly come to characterize the Information Age.

The net result of the developments described above is the rise of the concept of the network which, in its base and most simplistic form, is the collection of links and nodes that span across the three domains mentioned earlier. It may be claimed that this is a patently mechanistic view of networks; however, it is important to note that the *concept* of networks, in this context, is akin to that of complex adaptive systems and therefore, networks, like complex adaptive systems, are highly sensitive to their ecological context, that is, their environment. This kind of thinking – one which is able to bypass the link/node binary usually associated with networks – is network-centric. It is patently non-linear and structurally fluid. What makes the network perspective so powerful is that it reaches beyond the specifics of the hardware involved. Instead, the constantly evolving nature of networks points to the dynamic “laws of pure form”²⁷ (alternatively, of organization). This is being increasingly reflected in the thinking about weapon-platforms in the Information Age. No longer can weapon-platforms be thought of as singular and independent entities, they are now linked through a lattice of nodes and links and this entails thinking about the network of which they are a part of rather than of the platforms themselves.

Given this, war and its conduct in the Information Age is now no longer limited to the comparative destructive potential of weapon-platforms; instead, it is about the destructive and constructive capabilities embedded in networks and of networks themselves, which are complex and adaptive mini-ecosystems. These are each linked in innumerable ways to other networks, collectively forming the global networked ecosystem, which pulsates in accordance to its inherent dynamics. Given that networks are complex adapting systems, their susceptibility to Lorenz’s butterfly effects are very high. This makes the ontology of NCW intricately complex, inherently non-linear, patently unpredictable, and highly dangerous, more so than the battlespace of the traditional forms of warfare of the last century.

Security, then, in the networked environment, is more oriented towards control manifested in the form of a global surveillance. “We are moving toward control

societies that no longer operate by confining people but through continuous control and instant communication.”²⁸ This, in more ways than one, enables the emerging networked military to operate at will across the full spectrum of the networks that are increasingly enmeshing the surface of the earth. Recognition of this emerging state of affairs (which may be attributed, in part, to the emergence of the *concept* of NCW) enables us to engage with the strategies that the concepts of NCW have spawned. As we shall see, two orders of strategizing are possible. While the first may be understood in terms of the more militarily-oriented strategy, the second, which is more diffused and subtle, is a full spectrum strategy, which takes the world as a comprehensively networked battlespace as its conceptual and operational premise.

Two orders of strategy

If we combine our recognition of the complexity and non-linearity of the environment, the imperceptible, but relentless, process of the technologization of discourse, and the emergence and explosion of the networked phenomenon, we are, in the context of NCW, able to discern the emergence of a pattern. While it would be a misnomer to call this pattern a strategy at any level, except perhaps in terms of technology deployment, it nevertheless allows us to hypothesize on the direction that the practice of strategy may take within the rapidly expanding domain of NCW.

As is well known, strategy is a contested term.²⁹ It has and continues to mean different things to different people.³⁰ Thus, for example, while Clausewitz understood strategy as being “the use of engagements for the object of war,”³¹ for Basil Liddell Hart, strategy was “the art of distributing and applying military means to fulfill the ends of policy.”³² The difference, in this case, is one of refinement rather than content and is symptomatic of the definitional tussles that have taken place in the field of strategic studies over a period of time.³³ Clausewitz’s use of the term “engagement,” on a careful reading suggests that it comprises a much wider field than that pertaining merely to battles. Thus, engagements could also viably include not only battles and campaigns but also the use of threats – explicit and implicit (thus including all aspects of coercion) – and the available instruments of power for the furtherance of state policy. However, to state, as some have, that “[t]here appears to be a unity to all strategic experience, regardless of period, polity, or technology”³⁴ would be to assume a contestable a priori position which holds that the principles of conflict and war have remained true throughout the history of human experience. “A cursory look into the development of some of the most time-honoured ideas that comprise the principles [of war] will find historical contexts that are completely foreign to us today.”³⁵ This is reinforced by the fact that the “time we live in [is] unlike any other, a time when the pace of change demands that we change . . . it is a time when our analysis methods are becoming less and less able to shed light on the choices we face.”³⁶ In short, the topology of the world, as we have traditionally viewed it, has changed and, more importantly, the pace of change has perceptibly quickened. The pertinent question to ask, therefore, would be: Given the

widespread changes that are manifesting themselves across the topology of the world, driven by technology and our relationship to it in economic, social, and cultural terms, have the principles of war, indeed the *concept* of war, changed? If the answer to this is in the affirmative, then an examination of the act (or, as some would contend, the art) of strategizing is warranted.

In what follows, two orders of strategy – one local, the other global – are examined. The first, or the local order of strategy, is discussed in military terms and is more commonly identified as the strategy of Full Spectrum Dominance. The second, or the global order of strategy, however, is more abstract and speculatively oriented. This is because, *inter alia*, it draws attention to the global implications of the first order of strategy in the Age of Information.

The first order

One of the key strategic orientations of NCW, which is increasingly being trumpeted as a “new way of war,” is geared to combat, contain, and ultimately remove (though the possibility of removal remains highly suspect) the presence of the uncertainty principle within a patently martial condition. Yet, as we have seen, this ambition has been a constant thematic – sometimes subdued and at other times highlighted – throughout the history of military thought.

The development and deployment of advanced ICTs in war – when considered in the more banal sense of the application and use of technology in the prosecution of war – is most commonly understood as being an ambitious, some say misguided, attempt to deal with the (operational) problems posed by the uncertainty principle. Contrarily, the crux of the matter was cryptically alluded to by a former US Secretary of Defense who, on February 12, 2002, at a US Department of Defense news briefing, spoke of the future in terms of the “unknown unknowns, the ones we don’t know we don’t know.”³⁷ While his statement may have drawn ridicule from some quarters as being obtuse, one finds on a careful reading that not only was it a most curiously poeticized articulation of the uncertainty principle – both at the global and local strategic levels,³⁸ it was also a cloaked reference to the unstated ambition to reimagine the concept of war in informational terms.

As we have seen, the conceptual formulations of NCW hold information and information-superiority as being one of the critical competitive advantages for the military of the twenty-first century.³⁹ This is underscored by the recognition that the need of the hour is “to be highly responsive, adaptable, flexible and precise”⁴⁰ in the application of force and, one might add, in the identification of threats. Thus, today, information *as* warfare has become equally important as information *in* warfare.⁴¹ Information, in this context, is understood as being that which is “needed to accomplish the task at hand, which includes achieving the level of effectiveness specified . . . [and the] . . . efficiency metrics that reflect limits on the resources to be used in achieving that level of effectiveness.”⁴² This is now being materialized in the form of digitized C2 systems, which are increasingly geared to exploit information, gain information superiority, and deny an adversary the advantages of the same.

Information systems have always been central to warfare and critical in enhancing military effectiveness as is evidenced by the use of the telegraph, which considerably influenced military operations during the American Civil War, and of the wireless radio, which played a significant role in the operations of the German Panzer divisions during the *Blitzkrieg* campaign of 1940 in France.⁴³ The emerging digitized C2 networks and systems (aided by distributed computing and networking technologies, smaller micro-processors, wide bandwidth and the inversion of Grosch's Law), on the other hand, have allowed for a degree of dynamic interactions, particularly at the tactical and operational levels, unheard of previously. With a mix of voice, data, and dynamic images, a level of information richness and reach is being achieved which is enabling the instantiation of a Single Integrated Operational Picture (SIOP), which can be tailored for the analysis and dissemination of information across the board.⁴⁴ This is increasingly resulting in the obtaining of composite situational pictures at the various tactical, operational, theatre, and grand-strategic levels as identified by Luttwak.⁴⁵ It will be noted that while the situational picture may differ due to the different emphasis based on the needs and requirements at the various levels, there, however, does exist a strong continuity in the integrated picture that is available at all levels. This is another of the strategic keystones of NCW and is frequently referred to as "shared awareness." In turn, the digitization of C2 systems resulting in the creation of a "shared awareness," which when coupled with highly capable sensors/feedback systems and precision-guided munitions is gradually resulting in the development of a military organization unlike any seen before. This emergent organization is marked by an inherent flexibility and a peculiar adaptivity to the flux of the environment within which it operates.⁴⁶ In effect, it operates much like the complex adaptive system that we have had occasion to examine earlier. Concurrently, the availability of "shared awareness," by moving information rather than people, in turn, allows for dispersed and de-massed forces to synchronize, integrate, and collaborate on operations across spatial and temporal differences.⁴⁷ This, in turn, results in exercising an enhanced degree of operational flexibility at individual levels and collectively gaining full spectrum dominance at a global level.

It will be appreciated that, at least theoretically, the creation of "shared awareness" deployed through a networked military necessarily implies that the organization of C2 structures would also have to be rethought.⁴⁸ Traditionally, C2 structures were hierarchical and fully centralized. These C2 structures were also highly linear as is evidenced by the example of the Soviet Military Command structure of the Second World War and after.⁴⁹ With the emergence of the networked phenomenon, it has now become possible to progressively decentralize the C2 structure and to make it more adaptive to the rapidly evolving events occurring within the battlespace.⁵⁰ Military units networked (either by wired or wireless technologies) with weapon-platforms of different capabilities and high-end (long-range and short-range) sensors, within a decentralized C2 system, are now actualizing the projections originally made by the Soviet military thinkers in their speculative account of the RSC. The ability to engage a wide variety of targets over a geographically dispersed area is increasingly enabling the creation of a Wide Area Network (WAN) of interdiction possibilities.⁵¹

One of the consequences of these developments is that the different levels of strategy as identified by Luttwak and as alluded to by us earlier are slowly dissipating. "Historically these levels exist because of limitations in communications and span of control . . . NCW lessens these constraints"⁵² and thus allows for different modes of organization and operations. They also materially assist in developing certain key operational concepts as highlighted by the Transformation Planning Guide (TPG) recently approved by the US Department of Defense. Thus, the strategy of NCW, according to the TPG, revolves around:

1. Superior information position
2. High quality shared awareness
3. Dynamic self-coordination
4. Dispersed and de-massed forces
5. Deep sensor reach
6. Compressed operations and levels of war
7. Rapid speed of command
8. Alter[ing] initial conditions at increased rates of change.⁵³

The implications of this become evident when we place these strategic concepts within an operational Grid. Within such a Grid, these concepts can be reduced to the principles of dominant maneuver, precision engagement, focused logistics, and full-spectrum protection. The Grid referred to here requires a brief elucidation. Three kinds of networks constitute the Grid. They are the networks of information, sensors, and engagement, which are overlaid or meshed with each other. Collectively, therefore, the Grid enables predictive planning, integrated force management, and the execution of time-sensitive missions⁵⁴ and consequently defines the very boundaries of the battlespace.

While the development and deployment of such a comprehensive operational Grid is yet in the future, the US Navy's Cooperative Engagement Capability (CEC) is symptomatic of the architecture of the emerging Grid-based model of warfare. In simple terms, the final architecture of the CEC is expected to provide the US Navy, but in more general terms, the military machine, with three key capabilities:

First, CEC enables multiple ships, aircraft, and land-based air-defense systems to develop a consistent, precise, and reliable air-track picture. Second, it allows combat system threat-engagement decisions to be coordinated among battle group units in real time. Third, CEC will distribute fire-control-quality targeting information, when available, among units in the force so that one ship or aircraft might be able to engage threat aircraft and missiles even if it does not have targeting data on its radars locally. These key capabilities will allow Navy units to engage very difficult targets successfully – including low-flying, supersonic cruise missiles.⁵⁵

The CEC thus provides an interlinking of the various individual networks and as a result generates a "comprehensive – extended-reach/information-rich" (C-ER/IR)

operational picture which “captures” the battlespace and which can be shared by and with any battlespace entity that may be a part of the operation. Indeed, fresh battlespace entities could be cued into or exited from the active battlespace without any lengthy pre- or post-operational briefing. This allows for a much shorter engagement timeline thus enabling the tempo of the battle not only to be maintained but also to be increased, thereby dislocating (alternatively, disrupting) an adversary’s OODA cycle.⁵⁶ While the CEC is primarily a US Navy project, the strategic intent behind the *concept* of the CEC is a common thematic within the emerging US military posture and of the NCW project as a whole. It is conjectured that an ideal state of affairs would have multiple CEC-type Grids with a diverse set of capabilities interlinked with each other across the globe, which would resemble a gigantic fishnet within which the “unknown unknowns,” as noted by Secretary Rumsfeld, would be reduced, at the very least, to the “known unknowns.”

A number of inferences can be drawn from this. First, the development of the Grid (the CEC being the most material example) may be understood as being an attempt to reduce the uncertainty principle that has always afflicted the conduct of war. It aims to reduce the traditional Clausewitzian friction within one’s own forces by creating an adaptive C2 structure thereby making the C2 functions more fluid and decentralized. Second, it aims to create a mesh of networks that would make the calculation and computation of emergent threats and of their location and neutralization a much easier task than hitherto possible. In other words, the Grid would or should be able to generate dominant battlespace awareness – the maintenance of which would result in the perpetuation of the production and retention of dominant battlespace knowledge – which would deny an adversary the advantages of the same. Third, such an operational stance, which is more commonly referred to as “just-in-time” warfare suggests that:

In future information wars . . . reconnaissance, strike, and defence would be coordinated in battles fought as “meeting engagements” where both sides are on the offence . . . forces need no longer to be massed prior to attack . . . Not being able to sense where the attack is going to come from – because it would come from everywhere at any time – takes away the other side’s initiative.⁵⁷

In the context of our discussion of the Grid and of just-in-time warfare, it is important to note the significance of the emergence of operational concepts such as effects-based operations (EBO) and swarming. These complement the emerging military posture within the conceptual framework of NCW. Thus, for example, while “swarming is seemingly amorphous[,] . . . it is a deliberately structured, coordinated, strategic way to strike from all directions by means of a sustainable pulsing of force.”⁵⁸ This represents one of the best illustrations of how the strategy of NCW is evolving. It is necessary to point out that despite the cutting-edge revisionist work being done in the NCW area there still remains a strong residual interest in the popular AirLand Battle Doctrine which, despite refinements, essentially remains mass-oriented.⁵⁹ However, as the NCW phenomenon and the related

technologies mature, a radically new doctrine may very soon replace it. This is the doctrine of the "battleswarm."⁶⁰

Eminently suited for network-centric operations, battleswarms are being increasingly conceptualized as small, well-informed, and lethal units, which are intricately linked to each other, exercising a flexibility of deployment hitherto unobtainable in mass-oriented conventional formations, across the spectrum of battle. They would have an omni-dimensional operational capability and would be capable of a high degree of automated and synchronized actions. Given the progress evident in the development of unmanned aerial vehicles (UAVs), unmanned combat aerial vehicles (UCAVs), pilotless drones and other robotic instruments of war,⁶¹ it is not inconceivable that in the very near future swarm units would literally be machinic entities.⁶² The network architecture that would connect these units would ideally be highly robust, fluidly mobile, and would display an unparalleled degree of native intelligence, which would be instrumental in making them highly adaptive to a rapidly evolving battlespace.⁶³ It is interesting and instructive to note that while battleswarms, as described earlier, may yet be futuristic, closely related ideas are being worked out by the US Marines and certain elements of the US Army.⁶⁴

In the event that the doctrine of battleswarms and other similar concepts are actualized in an operationally deployable form, two consequences will be observable. First, a radical reorientation of the organization of the military will be increasingly noticed. Not only will this reorientation involve restructuring the command chain, it will also involve changing the way in which traditional fighting formations are raised, organized, and maintained. As a result, newer logistical paradigms will also have to be devised, as will the processes involved with their equipping and training.⁶⁵ These changes will, as a consequence, transform not only the military but will also redefine the nature of tasks that the military will perform in the future. In this connection, it is also pertinent to point out that the nature of planning will also change. While traditionally planning processes have occurred at the various levels of command, under the changing conditions, and given the fact that the levels of strategy are gradually collapsing, dynamic planning will gain precedence.⁶⁶ Dynamic planning will be more oriented towards individual missions, organized around a common thematic – usually defined by the COP – as opposed to the campaign-planning processes that military organizations have traditionally engaged in. This would signal a distinct change in the nature of the act of planning per se. It would become more fluid, contextual, and consequently would rapidly evolve in tandem with evolving situations.⁶⁷ It is also likely that dynamic planning processes would be highly automated to maintain and enhance the sensor-to-shooter links in a bid to retain a dominant position on and within the battlespace.

Second, and consequent to the aforementioned, the traditional distinction between strategy and tactics may be expected to increasingly collapse onto and into each other. Our brief discussion on emerging *concepts* of operations like just-in-time warfare, where forces will remain deployed, "virtually," is a case in point. In other words, across the multitude of CEC networks (collectively the Grid), forces will remain in a state of readiness, poised to engage with threats with insignificant

lead times.⁶⁸ Moreover, the presence of active sensors – long and short range – cued directly into weapon-platforms will act as more than early-warning posts. They will be the new frontline. Significantly, given that the sensors and their associated weapon-platforms will be deployed in an omni-dimensional manner, the frontline will also be omni-dimensional and thus, “everywhere.” On the same note, swarm units, as and when they become fully operational (in terms of doctrine and technology), will represent a disaggregated and dispersed fighting machine, which will already be in a (virtual) state of war. Under these conditions, the act of strategizing, marked by the traditional practice of marshalling and deploying the necessary means to further state policy, will have very little meaning. The implicit offensive posture of the networks in which such battlespace entities will be located will, as a consequence, ensure that war will be more of a “running battle” or a “continuous engagement” between numerous networks rather than the traditional attrition-style engagements between masses of weapon-platforms.⁶⁹ Given that the computing and networked power of networks will have increased exponentially (all things remaining constant) the perception of threats, calculating their lethality, and devising adequate responses to them will be instantaneous or as close to real time as possible. This draws us closer to a condition wherein continuous and evolving tactics rather than the traditional set-piece act of strategizing will be the order of the day.

The second order

Previously, we discussed a number of devices and means by which the actualization of NCW is taking place. The emphasis, as we have seen, is on collapsing time, creating common operational pictures to ease the complexities involved with C2 functions, and attempting to alleviate the trials and tribulations resulting from the inherent non-linearity of our environment. Collectively, these efforts may be understood as being examples of pragmatic attempts (by leveraging the power of ICTs) being made to reduce the problems associated with the conduct of war.⁷⁰ However, it is also possible, in an abstract sense, to note the emergence of another phenomenon, which has shadowed the emergence of NCW.

We saw how the technologization of discourse is necessary for facilitating the instantiation of a COP. We also noted that when cast against the framework of the networked environment with its concomitant paths of information-flows, the technologization of discourse is instrumental in reducing the textures of information to facilitate its flow through the circulatory channels which have, in turn, assisted in giving material form to the common interfaces between the human and the computer.⁷¹ In the context of battlespace entities we find that without enforcing increasing degrees of standardization, it would be impossible for these entities and their constitutive agents to function. This would, in turn, result in the disintegration of the very bedrock on which the theories and doctrines of NCW have found their material manifestation. In this connection, it is necessary to point out that the reference here is not specifically to the “richness” of information, but also to the underlying dynamics of the flows of information that are being increasingly standardized.⁷² However, even when considered in the context of the richness of

information, the element of standardization is evident in the fact that there are parameters which define the richness of information and, consequently, the “incorrigible recidivism” that Dillon identifies with reference to words and, by extension, to language, is gradually being flattened out.

We cannot, therefore, help but recognize that the instruments which are actively assisting the phenomenon of NCW to manifest its material instantiation also collectively operate as agents for a subtle but grand totalizing project. While being a subject of interest, the question as to whether it is a project driven by intentional agents or not, lies outside the scope of this study. Suffice it to say that this grand totalizing project is visible and it does draw our attention to the fact that with the desire to refine the conduct of war, there may have emerged a phenomenon, which has not only trapped us in a space in which we are being increasingly constricted by, among other things, the rapid advances of technology, but which may have also changed the operative *concept* of war.

Take, for example, the words of Libicki who, as we have seen, in the context of tactical and strategic sensors, wrote that “a sufficiently fine web can . . . catch anything.”⁷³ At one level we can understand this to mean that since a CEC network is a combination of three different kinds of networks (of sensors, information, and engagement), the possibility of any threat evading the mesh of a large number of CEC networks is rather limited. In this sense, it also inhibits the emergence of threats from within the mesh of networks. This implies that if threats do emerge, they will do so outside the mesh of networks that collectively comprises the CEC. Moreover, given that everything (at least hypothetically) within the mesh of nets can be targeted and neutralized, then for the threats to remain viable, they not only have to remain outside the mesh of networks, they will also have to possess and/or devise the ways and means by which they can evade them.⁷⁴ Thus far Libicki’s words remain relevant within the confines of a purely military context.

Now, recall again, in this context, our discussion on the technologization of discourse. Aside from noting how the technologization of discourse facilitates the instantiation of COPs, which are one of the fundamental building blocks of CEC networks, we have also explored how it results in the limiting of the “conditions of possibility.” If the technologization of discourse is understood as occurring within and by means of the mesh of networks, then it would not be too far-fetched to conclude that networks, under these specific conditions, materially limit the “conditions of possibility.” In other words, nothing that is possible can or could occur outside the mesh and spread of networks. In this sense the emergence of potential threats is limited to the space defined by the mesh of networks, rather than from any space outside it. This, albeit at a simplistic level, also implies that the mesh of networks will be (or should be) able to precisely calculate and prioritize threats from the moment of their instantiation and will be able to counter them at a time and place of its choosing. There is nothing very esoteric or futuristic about this. The procedure and processes involved would be very similar, if not the same, to those used by the mesh of networks to address purely military threats. The problem, however, lies in how a/the threat is determined and who or what constitutes a/the threat.

As we have seen, in the Age of Information, the technologization of discourse is fundamentally based on the project that aims to digitize language. This suggests that the uncanniness of language – manifested by its rich and varied textures – is now susceptible to being reduced, ultimately to a binary state, and stored in an easily retrievable and contextually relevant and presentable manner. In this connection, the most recent developments in the fields of biometrics and pattern-recognition are instructive and relevant.⁷⁵ The reduction of the conditions of possibility to code (alternatively, language to digital code) allows for the potentiality of the emergence of threats to become wholly susceptible to pre-emptive programming which would be pre-emptively-preventive, or at the very least, offensively-combative in nature. Under these conditions, the identification of threats becomes a matter of computation.

The definition of EBOs, which we have considered as being one of the manifestations of the strategies of NCW, in this context, is instructive. EBOs, it is contended, are a “coordinated sets of actions directed at shaping the behaviour of friends, neutrals, and foes in peace, crisis, and wars.”⁷⁶ The definition is instructive in the sense that it considers “friends, neutrals, and foes” in the same light – those whose behavior in conditions of peace, crisis, and wars must be directed. Thus, the traditional binary between friend and foe is made contingent on the basis of whether an entity behaves like a “friend” or a “foe,” which is understood in terms of a behavior-pattern which falls within a parametric band of “acceptance.” In other words, the categories of “friends” and “foes” are dependent on pre-calculated contexts, in much the same way as the digitization of language reduces the texture of language to a binary which, if considered in terms of presentation and re-presentation, is also context-dependent. It is significant to note that the only contingency that is of relevance here is that of danger and of “becoming dangerous.”⁷⁷ Danger here may be understood as any activity or action (including their potentiality) that is destabilizing to the system of networks and, in this sense, is of high relevance within the network-centric context.

If, as we have seen, the presence of the individual constitutive agents within complex adaptive systems is contingent on their ability to maintain their individual equilibrium within the systems thereby contributing to the general stability of the system, then it is to be expected that if an agent within a complex adaptive system is unable to maintain its equilibrium, it runs the risk of being removed or neutralized. This is because it is only in this way that the complex adaptive system can guarantee its own continued presence. The process is the same within the mesh of networks. To forestall the destabilization of the mesh of networks it must, therefore, continually act in a colonizing manner, seeking out spaces that are not covered by it and by limiting the conditions of possibility (by standardizing and/or by reducing everything within its ambit into computable units) and thus the threats to it. In this way the mesh guarantees its own security in terms of its integrity and equilibrium. From the perspective of the constitutive elements within the mesh of networks, however, the ontological condition is one of continual danger. It is dangerous because, as we have seen, any activity that could disturb the native equilibrium of the mesh of networks would invite total and complete destruction.⁷⁸

The options are few, for as Libicki puts it, “a sufficiently fine web can . . . catch anything.”

NCW: . . . and here is the “beef” . . .

This investigative overview, which has spanned across a number of sites and registers, indicates that the semi-official and official documentation that records the emergence and dynamics of the NCW phenomenon are quite optimistic about the potential of NCW as being the new way of war. There are valid reasons for this optimism. If the introduction of ICTs can dramatically enhance combat effectiveness thereby shortening the duration of war, then their deployment – to, among other things, limit the evils of war – would seem logical and indeed welcome.⁷⁹

As we have seen, the phenomenon of NCW closely analyzes the traditional dynamics of war and uses ICTs to dramatically quicken the associated processes. Thus, we see the shortening of decision-making cycles, the creation of seamless sensor-to-shooter links, the deployment of advanced sensors linked directly to vast information processing, analyzing and fusion systems as being material advances in the area of NCW. This, in turn, has yielded – and is expected in the future to yield – multi-faceted results. Thus, for example, while on the one hand, as the traditional C2 functions become increasingly digitized and linked in near real time to a wide and increasingly dense array of powerful sensors, thereby increasing their efficiency, on the other hand, they have also brought about a corresponding decentralization in the C2 hierarchy. Consequent to this, there is a growing recognition that the decentralized model of C2 systems is better suited to contend with the complexity, non-linearity, and the rapid tempo that characterizes the conduct of war, a fact attested to by, among others, Clausewitz. The increasing emphasis on decentralization is also bringing in its wake a change in the organizational dynamics of the military. This, in turn, is having a cascading impact on the development of military strategies and doctrines. It would not be a mistake, therefore, to state that the way that warfare is organized and conducted is also undergoing a change.

But, as we have seen, all this did not happen suddenly or in a vacuum. The growing recognition of the inherent complexity and non-linearity of our environment and the emergence and viral spread of ICTs were the results of frenetically creative periods within the commercial and scientific-technological worlds. Further, we find that the incorporation of these technologies and sciences into the military sphere is not a singular result of the advent of the Age of Information. By sifting through any account of history we can find examples of how science, technology, and the military have found common grounds from where they have shared their individual insights. The same also applies to the world of commerce. In this way, we can identify a symbiotic relationship that enmeshes the military, technology, and commerce.⁸⁰ It is equally valid to state that the scientific-technological developments that have accrued over time and which are now being manifested in the Age of Information have also had a significant impact in the socio-economic-cultural (alternatively, non-military) environment. The dynamics of these changes may be understood in the way value is now being reconstituted. The value chain

analysis propounded by Michael Porter, whose ideas we have examined earlier, stand testimony to this. The trickle-down effects of these developments have also affected the social world.⁸¹

Additionally, the emergence of ICTs has significantly opened up the information-sphere, rivaling the physical and cognitive domains, which is a vast terrain within which we are being increasingly absorbed.⁸² Indeed, ICTs have, to a large extent, re-territorialized the world that we live in.⁸³ They have “put people and information in close electronic contact with each other.”⁸⁴ As a consequence, they have also had an influential impact on our discursive practices. Foucault has shown us the traditional role of discursive practices in acts of power formation. This, as illustrated by Foucault, has long been recognized by institutions which have strained to control these activities in their bid to monopolize power. In the Age of Information, discursive practices have assumed an importance that is qualitatively different from the societies investigated by Foucault. Language and discourse have been recognized as being the key pivots of the Information Age. To ensure that the project of digitization of all walks of life and existence is uniform, the technologization of discourse, which has always lain beneath the surface, has emerged as being a critical factor.⁸⁵ The reduction of language to digital code has its resultant implications, the first among which is the gradual re-constitution of the conditions of possibility in technical terms. These and associated changes in the socio-economic and cultural world have also had an impact in matters pertaining to defense and security. Consequently, if, as is contended by many, that “war reflect[s] the relationships of individuals, the communities that they form, and the nations that they live in”⁸⁶ then, it is valid to presume that the emergent theories and doctrines of NCW reflects the networked nature of modern-day society. Thus we find that when distilled, the strategy of NCW, in the Age of Information, is characterized by four themes:

1. The emphasis on the network or the mesh of networks
2. The emphasis on assemblages rather than on unitary actors
3. The emphasis on understanding military systems and the battlespace as a complex adaptive system which is evolutionary
4. The emphasis on information being the critical currency.⁸⁷

In this connection, it is worth pointing out that some have contended that NCW is not about networks; rather, it is more about networking.⁸⁸ The power of NCW, it is further contended, is derived from the complex and intricate linking of knowledgeable entities which results in increased combat power. This is misleading. At the conceptual level, NCW is all about networks. Combat power, in the NCW context, is wholly dependent on the network. But this is not because weapon-platforms, sensors, and ultimately decision-making systems are being increasingly embedded within networks; rather, it is because networks find certain modes of expression through such systems and platforms and their singular and collective capabilities. Recall, in this context, the native intelligence of networks that Baran’s investigations helped us identify (and which we can expect to grow exponentially, given the advances being made in the domains of neural-network programming,

evolutionary programming, real-time search and retrieval systems, and other advances in bionic systems⁸⁹). The interlinking of these platforms and systems is the function of this native intelligence, rather than any conscious networking done externally.⁹⁰ Thus, the wider, deeper, richer, and denser the network is, the greater would be its combat power and resilience. This faithfully adheres to the principle of the “sum of the parts being greater than the whole.”

The dynamics of the emerging NCW project evidenced by the thematics of its strategy as outlined earlier thus points to the fact that in a networked environment which, among other things, is characterized by the changing nature of value and the processes of value-creation, the geo-physical acquisitive intent that drives the traditional logic underlying wars in the past has and will continue to undergo a qualitative change.⁹¹ In turn, this has also initiated, as we have seen, a change in how threats are perceived. The calculus that determines threats now recognizes them as disruptive elements which possess the ability to destabilize the network or mesh of networks. This calculation is based on the level of disruption that a threat can pose to the informative-intensive planetary-scale network.

Consequently, the theories and doctrines of NCW, which, among other things, may be considered as being a response to the need to make the conduct of war more efficient and less destructive, are simultaneously also disclosing a parallel and more forbidding face. Given that the material success of NCW lies in the establishment and operationalization of a plethora of highly advanced sensors interlinked with each other which are constantly on the lookout for signs of the emergence of threats, it is therefore not surprising that we can identify the emergence of a culture of “omnipresent danger.”⁹² Additionally, the technologization of discourse, which is rapidly circumscribing the conditions of possibility, is resulting in a condition that suggests that nothing outside the network or mesh of networks should (or could) be possible. The potentially totalizing implications of the NCW theory, in this, will not be missed. This, as we will see, leads us to conclude that the Deleuzian observation of the radical shift from disciplinary societies to controlled societies is vindicated.⁹³ It is also indicative of the subtle transformations that are underway in our understanding of the *concept* of war in the Age of Information.

Inside/outside the Clausewitzian legacy

As seen previously, the martial theorists of the Enlightenment and Early Romantic periods – dazzled by the promise of Reason – had been driven to develop models of war and its conduct based on a calculus that was highly rationalistic in its design, processes, and outputs. Against this backdrop, the Clausewitzian theory of war may be considered as being a maturation of these efforts. Like Kant who built an architectonic of Reason, Clausewitz built an architectonic of war within Reason. Like its Kantian counterpart, the Clausewitzian architectonic thus appealed

to the continuity of time in order to counterbalance or dilute the violent, heterogeneous threshold of sensation, so as to see it in terms of degrees and thus make it measurable and calculable. The advantage [was] considerable.

Henceforward everything which seemed impossible to master within the sensible, all that Descartes, in the example of the piece of wax, abandoned to the imagination (its heated liquid form, its honey-like aroma), everything becomes, thanks to the idea of a specific degree of sensation, an object of possible knowledge.⁹⁴

In this way, the vagaries of chance and force (the *nature* of war) were deemed to be mitigated, or at least contained, by Reason. But the Clausewitzian architectonic was also careful to temper this enthusiasm with the Kantian recognition that even Reason had to accept its limits – antinomies – by posing questions to which Reason, as Pure Reason, had no answers. Thus, we were able to identify the tense grid of chance/uncertainty, blind natural force, and politics with and within which the Clausewitzian theory of war bound itself.

Of course, the key consideration remained the mitigation of chance and blind natural force. Clausewitz, we noted, was concerned with two principal issues in his problematization of War. First, with reference to the *conduct* of war, Clausewitz was concerned about *Friktion* which, as Watts points out, “has a long historical lineage. It predate[d] Clausewitz by centuries and has remained a stubbornly recurring factor in combat outcomes right down to the 1991 [now, 2003] Gulf War.”⁹⁵ As we have seen, “[t]he concept of friction is not just a statement that in war things always deviate from plan, but a sophisticated sense of why they do so.”⁹⁶ This is certainly true of Clausewitz’s concern/interest in *Friktion*. It also reflects a deeper understanding of the anterior nature of Chance and Uncertainty. In this sense, it could even be ventured that Clausewitz’s *On War* is nothing less than a martial account of how to organize in the face of Chance and Uncertainty. Second, Clausewitz was also troubled by the logic of Absolute War. Indeed, we saw how Clausewitz’s concern with Absolute War was focused on its predilection to be in excess of Reason. Thus, he insisted on girding the phenomenon of war with and by “the political.”

Clausewitz had suggested that his architectonic of war, which did much to break the inflexible models and theories of war and its conduct of his predecessors, was akin to a “game of cards.”⁹⁷ Now, Beyerchen points out that “[t]his analogy suggests not only the ability to calculate probabilities, but knowledge of human psychology in ‘reading’ the other players, sensing when to take risks, and so on.”⁹⁸ Thus, Beyerchen concludes that:

War is not chess; one’s opponent is not always playing by the same rules, and is often, in the effort to win, attempting to change what rules there are. This is a major reason that how war is conducted can and does change its character, and that any war is (in Maxwell’s sense) structurally unstable.⁹⁹

Beyerchen, of course, ignores the fact that even Clausewitz’s analogy of war as a game of cards is not structurally unstable and that the participants in a game of cards (or, for that matter, chess) necessarily play by rules – indeed by a commonly agreed upon set of rules – which each may choose to observe (or violate). Thus, while dissenting from the general point that Beyerchen makes – that Clausewitzian war is

structurally unstable – this study makes the case that the Clausewitzian theory of war – indeed our modern theories of war and the military – is as much of a “game” of cards as it is of chess.¹⁰⁰ Note that what is being contested is not the specificity of the game – cards or chess – that is being played. Rather, it is the game itself that is of interest and relevance to us.¹⁰¹

The Clausewitzian understanding of war, like chess, is one that spreads across a grid and operates along and around certain critical points pertaining to that grid (see Figure 4.1). Primary among them are the following:

First, the set of four squares at the center of the board represent the “heartland” of the game of chess. A cursory appreciation of the strategy of chess reveals that these four squares are critical in and for the game and controlling them, that is to say, denying them to an opponent allows a player to gain and retain a strategic advantage in the game. When cast in Clausewitzian terms, these four squares represent the center of gravity of the field of battle and, as such, is a location or site that determines the strategic direction that the battle will take. Further, it is interesting to note that the player who commands and controls these four central squares also exposes them to enemy action. Thus, the exercise of command and control of these four squares is both a blessing and a curse. It is the former in the sense that controlling them allows a player to control the game, and it is the latter in the sense that articulating its presence simultaneously also reveals its precise location and nature (more on this later) thereby opening up the possibility for it to be attacked. In this

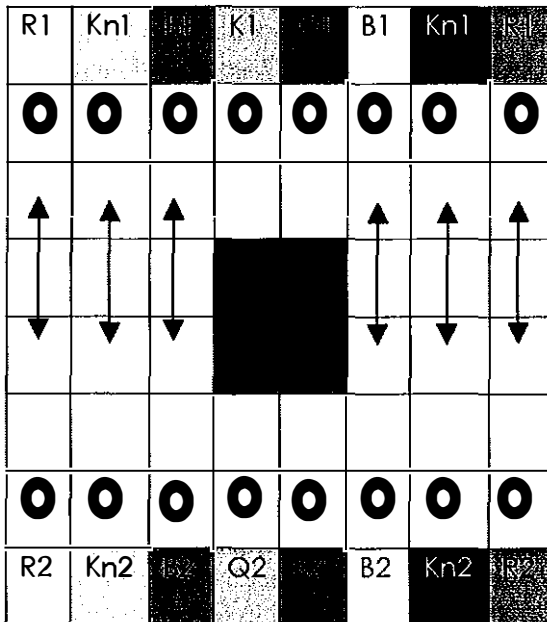


Figure 4.1 The grid of chess

connection, it is significant to note that Clausewitz made much of the center of gravity of an army.¹⁰² Indeed, Clausewitz noted that the endgame of any battle depended on the ability of an army to destroy/annihilate the opponent's center of gravity and, pursuant to this, the *schwerpunkt* of an army's efforts must be geared – so theorized Clausewitz – to ensure the annihilation of the enemy's center of gravity.¹⁰³ But equally, Clausewitz also emphasized that defending a center of gravity, historically, has shown to always have a better prospect than assaulting it.¹⁰⁴ The object(ive) of offensive operations, in Clausewitzian terms, thus is geared to target and destabilize an enemy by destroying his heartland – his center of gravity. The object of defensive operations, on the other hand, would be to protect this heartland from the destabilizing effects of an enemy's offensive operations and to ensure the pursuit of counter-offensive operations when able. As a point of passing interest, this aspect of Clausewitz's theory of war found its fullest expression during the Age of Mechanized Warfare wherein strategizing for the operations and counter-operations that would take place around such objectives took precedence over other considerations. Expressed in geopolitical terms, Clausewitz's insistence on the criticality of the center of gravity bears a striking similarity with the controversial theories of geopolitics concerning the heartland and the rimland.¹⁰⁵

Second, the grid of chess, as mentioned earlier, spreads across 64 squares. Given this, it could be said that the conditions of possibility of the game of chess are bounded by the 8×8 grid within which the action, in a manner of speaking, takes place. In other words, the 8×8 grid of the chessboard is its grid of intelligibility, that is to say, it is its *nomos*. When translated in Clausewitzian terms, this grid of intelligibility is that of the political – a point most forcefully reiterated not only by Clausewitz, but also by most subsequent commentators on war and military theory. Thus, as in chess, wherein the moves of the individual pieces are rendered understandable only within the 8×8 grid, the Clausewitzian understanding of war and its instruments – politics, armies, technology, culture, economies, etc. – are also rendered understandable in the grid of the political which, in one of its more common material manifestations, is the State. War and the State – like the pieces of a chessboard and the 8×8 gridded-space of chess – thus represent a distinctly martial universe. They are inseparable from each other. They cannot be thought of without each other and in this are self-limiting. Thus, Clausewitz, while tacitly acknowledging the anteriority of chance and uncertainty, struggled to ensure that chaos, uncertainty, and chance – the features that Clausewitz suggests are critical in any study of war – remain within this grid and in this sense, also within the ambit of Reason-as-such. In this way, the taming of chance becomes the *raison d'être* of politics in the form of the State. That is what Deleuze points to when he speaks of the apparatus of State-science and, in sharp contrast to it, nomadic science.¹⁰⁶

Third, one finds on taking an even cursory look at the space of chess, that there is a striking binary function that is operative within it. It is equally important for us to recognize, however, that this binary function is reflective rather than being essential. It is the relationality that the inversion of Vision shares with Vision. This is evident if we look at the arrangement of the pieces on the board. As Figure 4.1 demonstrates, the pieces labeled R1 (Rook), K1 (Knight), B1 (Bishop), K1

(King), Q1 (Queen) are in equal measure reflected on the opposite side of the board – R2 (Rook), Kn2 (Knight), B2 (Bishop), K2 (King), Q2 (Queen). Further it will be noted that each of the pieces, emphasizing their reflective natures, possess and exhibit identical functions. Thus, R1 and R2, which are situated on opposite sides of the board, possess and exhibit exactly the same capabilities which, in the case of the Rook (R [1/2]), is the ability to move vertically and horizontally for an unlimited number of spaces relative to the extent and spread of the board. The implication of this of course is that even before the commencement of battle on the board, each of the players can theoretically identify the moves and counter-moves available to the opponent, and the maximum capability of the opponent's "army." The parallels that can be drawn between these elements and the Clausewitzian notion of war are instructive. As in chess, the point around which the Clausewitzian theory of war revolves is the notion of "correspondence" between one's own forces and that of the enemy. This correspondence allows Clausewitz to suggest a grammar or logic of (Real) war. This grammar or logic of war allows for the plotting and planning – collectively, the strategizing – of battle and, by extension, of war. Of course, the Clausewitzian notions of the fog and friction of battle/war do make their presence felt, but as mentioned earlier, these occur only within the grid of intelligibility of war which, in the Clausewitzian case, is the political and ultimately that of Reason.

Lastly, though each player in a game of chess knows the precise capabilities and functions of the pieces and of the layout of the grid of play, the dexterity involved in the movement of the pieces over and across the gridded space is what distinguishes one player from the next. The same is equally applicable on the field of battle and by extension to war. The realm wherein this dexterity is displayed, as we have previously seen, is that of the Genius. What cannot, however, be denied is the fact that maneuvers, operational dexterity, angles of attack, modes of defense, etc. cannot help but be organized in accordance with the laws of the grid of intelligibility (which in this case may be understood as the Laws of Time and Space) that *gestells* not only chess but also war. Thus, equally the Clausewitzian Genius in War remains operative in the gridded space of the political, that is to say, Reason. Clausewitz's Commander (ideally, the Genius) therefore emerges as the Genius of Reason – the *strategos* – the one who commands the signs (of war).¹⁰⁷

For Clausewitz, of course, all this was necessary, but speculative, theory. In NCW terms, however, theory is being increasingly actualized in practice. As we have seen, the foundational principle that underwrites the NCW thesis is that of chance, uncertainty, and blind natural force and it organizes itself in terms of a recognition – or of a sense understood simultaneously as an ability and a capability – of that which is uncertain, and as an expression, that is to say, as a response – again as an ability and as a capability – in the form of an active engagement with the uncertain. We should be careful not to conflate this understanding of sense and response with the implied reflexiveness that we find scattered throughout the Clausewitzian theory of war. Thus, unlike Clausewitz, who kept the Abyss of pure force, chance, and uncertainty at bay with a variety of devices, NCW looks into it, co-responds with it, and seeks to engage it by establishing a computable economy of relations with/in it. This is nothing less than NCW's attempt to go beyond

Reason and to “make the Abyss its own.” Thus Martin Libicki can assert: “even with stealth, everything ultimately can be found.”¹⁰⁸

While the implications of Libicki’s words at the level of the material battlefield are chilling enough, they also suggest a meshing of subject-based desires and a non-human *desire-ability* to catch anything within the crosshairs of a moving/morphing/multi-textured grid of *response-ability* and *sense-ability*. If this is (ideally) the operational posture necessary for the conception and prosecution of War in the Information Age, then, (to be) NCW (that is to say, to be martial) – without uncertainty as is the stated aim of the NCW doctrine – is nothing less than *to be* (standing-reserve securely). Naturally, under these conditions, turbulence – at some or any epsilon – is a threat for it entails a disturbance *to be*. In this sense, the emerging theories and doctrines of NCW are a signature of a becoming – a becoming-NCW – which is, paradoxically, the becoming of being (i.e., *to be*) for such is the entropic logic of NCW.¹⁰⁹

From the perspective of the State as a strategic ensemble, this is a strategic maneuver of the greatest importance for it is effected at the very edge of Reason where strategic ensembles increasingly find themselves – as sites, locales, and positions – decomposing into “the small and the many.” Here the State, indeed “the political,” faces, in Secretary Rumsfeld’s quixotic words, “the unknown unknowns.” Thus, Hardt and Negri suggest, the State is re-discovering that the war of the small and the many is not a part of its exclusive preserve and under its control.¹¹⁰ To cope with these bounds of Reason (as the political), the State (as Reason) fashions, that is to say, produces – not simply acquires or appropriates – a war machine in the form of NCW. But the State’s complicity in the emergence of NCW is not simply limited to an act of creation or production. The State itself is self-organizing according to the very principles of net-centricity that underwrite the theory and doctrines of NCW.¹¹¹ In this way, paradoxically, NCW as a war machine, which brings with it the single greatest transformational potential for or on behalf of the State, also promises the transformation of the State (and by extension, the political) into a sub-assemblage and as an instrument of itself for, as we have seen, the strategic object of NCW is to organize towards a condition in which “[t]otal war is surpassed, toward a form of peace more terrifying still”¹¹² and where Reason answers – ideally without any antinomies – to Reason itself.

In this context, recall that the emerging strategic object of war – as indicated by Admiral Cebrowski – is not simply the re-cognition of transformation, but the *desire-ability* to exercise control in a transformational context, and thereby command (in) it. Against this backdrop, and in light of what we have seen thus far, the theories and doctrines of NCW appear disposed to pre-empt the progressive break-up of strategic ensembles into tactical, sub-tactical, local, and singular initiatives. Additionally, as we have also seen, being premised on Reason, or more precisely, calculative Reason, the theories and doctrines of NCW highlight a contradiction with/in themselves. We have already established that, that which ultimately serves to limit the excess of Clausewitz’s Absolute War is the *thanato-political*. We cannot, therefore, afford to ignore the fact that unlike Clausewitz’s Absolute War, which, while seemingly responsive to the demands of the political (that is to say,

Reason), remains indifferent to it. NCW is in-difference with not only Reason (as the political) but also to *Thanatos* by rendering them (Reason and *Thanatos*) into a condition of suspended animation. This rendition is a matter of default (or necessity) in the context of the grammar of the NCW paradigm. Thus, we should not be too hasty to dismiss NCW as the simple informationalization/digitization of Clausewitz's Absolute War; indeed, as this study contends, the instrumentality of NCW – marked by its in-difference to Reason (the *thanato-political*) – is pivotal in our recognition of the complexity and critical immediacy that war – considered ontologically – impresses upon us.

While there is a plausible, some would say, dark, argument to be made in favor of the technological trajectory of the NCW project as being a strategy of Reason,¹¹³ for our purposes, however, NCW – as a *kehr* – is also indicative of an uncanny *intensiveness* of war where/in the extensivity of NCW – NCW as a digitized version of Clausewitzian War¹¹⁴ – unfolds. It is important to remind ourselves that this intimation of the *intensiveness* of war comes to us in the context of a transformation of Reason – from the philosophical to the technological – that is currently underway as our fundamental concepts of speed, time, and scale collapse into and onto each other.¹¹⁵ It is also important for us to note that our recognition of this intimation of the *intensiveness* of war is marked by a singular lack of an economy of relations with/in Reason; rather, it is an *excedence* which allows us to point to the always-already spectral presence of the *intensiveness* of war. The invocation of the Levinasian term (*excedence*) serves to reiterate that the *intensiveness* of war does not arise from Reason (as the political and the State). Rather, it is an a-rising without any predicates. Given this, the theories and doctrines of NCW, as an expression of martial-in-corporeality, may thus be understood as a posture – rather a (martial) bearing – that is immanently informed by the *intensiveness* of war.

5 Concept-war

“[M]odernity,” Ansell Pearson suggests, “is haunted by the threat of the eternal return of the same and captivated by the promise of the arrival of the new, the unique and the singular, an experience of time that is ecstatic, explosive and aeonic.”¹ The signature of this world is in, among other things, the

failure of representation, of the corrosion of identities, and of the discovery of non-human forces that operate under the representation of the same and the identical . . . (where) . . . [i]dentities, and matters of life and death, are simulations, masks produced as an optical effect of the more profound game of difference and repetition.²

While Ansell Pearson’s depiction of modernity – with its “failures of representation and of the corrosion of identities” – may be an apt description of the emerging battlespace, what immediately catches our attention is his strong reference to the “non-human forces that operate under the representation of the same and the identical.”

Recognition of this, as we have already seen, was never far from the surface of the theories and doctrines on and of war. Indeed, it can be viably said that Clausewitz was only one in a long line of illustrious military thinkers and practitioners of war who attempted to contend with these “non-human forces” not simply in operational terms, but also philosophically. The evidence marshalled thus far suggests that the logical, that is to say, the Reason-able, trajectory of such attempts in the Age of Information has only resulted in the continued subjection of war to, as Ansell Pearson highlights, the laws of entropy (homogeneity, abstract equivalence, neutralized differences, etc.).³ Nevertheless, commentators such as Coker, for example, claim that

It is worth recognizing that if war still has a future for the western world . . . this is largely due to technology, especially the new technologies associated with the information revolution. It is that revolution which now offers the West the chance to reinvent war and fight it more imaginatively (and yes, more humanely) than in the past.⁴

This reflects a high degree of optimism in the technologization of war. However, this optimism is suspect because, as our review of the theories and doctrines of NCW shows us, the philosophical backdrop of NCW – despite being informed by an implicit understanding of technology in terms of an originary technicity, where “technology is a constitutive prosthetic of the human . . . a dangerous supplement that enjoys an originary status” – makes, what Ansell Pearson would insist is, “the entirely spurious claim that with the coming of computers and the arrival of robot intelligence the planet is now entering a ‘silicon age’.”⁵ Spurious because, among other things, despite the apparent *kehr* to the non-human, the circumscription of war by “the political” remains a potent reminder of an “anthropocentrism and overlooks the simple fact that the human [the central figure around which it is claimed war revolves] is not only a technogenesis but equally, and more importantly, a biotechnogenesis.”⁶ Our analysis of the history of military thought, including the theories and doctrines of NCW, shows us that the circumscription of war to the political has been a constant thematic in most, if not all, considerations of war and its conduct. The impact of this has been significant as is evidenced by the distinctly Clausewitzian tones in which the question regarding NCW is most commonly addressed. Working from this premise then it is possible to reflect on the prevailing discussions that engage with the emergence/advent of the “digital soldier,”⁷ and of the “digital way of war,” as a vapidly postmodern re-presentation of a process which, as Foucault advised us, began with the “making” of the Soldier during the French Revolution.⁸

Yet, we have also seen how, even Clausewitz, when confronted by chance and uncertainty, had hinted at a possible state or condition where/in war breaks free from the bonds imposed on it by the political. Of course, Clausewitz discussed this tangentially by taking recourse to the categories of “the pure concept of war,” Absolute War, and Real War. In the context of NCW, as pointed out at the outset of this study, there is also some evidence – primarily in the form of carefully managed issuances of policy statements, studies, and investigations – to suggest that military thinkers have begun to, if not wholly abandon, at least seriously interrogate the conceptual paradigms of war that have traditionally promoted a reasonable and rationally predictable calculus. These studies, analyses, and projections are discussed in terms of a shift in focus from “nation-state threats – to decentralised network threats.” They are often also discussed in terms of generations of war, with the latest being 4GW or fourth generation war. But behind the esoteric phraseology that, more often than not, is used to describe this turn of affairs, and the claims that are made heralding a “new way of war,” a closer look shows us the NCW theorists addressing a problem analogous to the one Clausewitz faced when he – situated as he was on the cusp of the Enlightenment and Romantic Eras – attempted at a comprehensive theorization of war. This was the problem of chance and uncertainty – not simply in terms of Friction, but also in terms of its anteriority which, as we have seen, led Clausewitz to complain about these twin phenomena being the most inconvenient of intellectual tools. The NCW theorists, of course, openly accept this; indeed, they make it the cornerstone of their theoretical – and increasingly practical – efforts as is reflected in the QDR 2006, which refers to a shift into “an

era of surprise and uncertainty.” Thus, the only, but significant, difference between NCW and the Clausewitzian projects, lies in the fact that while Clausewitz deferred addressing the inconveniences posed by the anteriority of chance and uncertainty (and of their presence as *Friktion*) by resorting to the figure of the Genius and by relying on the order of “the political,” the NCW theorists, backed by the fast-paced transformations in the ICT sectors and benefiting from the emergence of the “new sciences,” proactively confront it. For the NCW theorists, the rapidly proliferating ICT-based dependency-structures, present an opportunity to imagine a radically offensive posture vis-à-vis the anteriority of chance and uncertainty. In other words, what we increasingly find the NCW theorists doing – mostly by default rather than by intent – is address the problem posed by the anteriority of chance and uncertainty by not defending the existent Real, but by (re) creating it or, at least, by modifying the existent Real, in virtually unrecognizable ways. And, to do this, the NCW theorists are increasingly turning to the “new sciences,” and other emerging knowledge spaces like evolutionary biology and the genetics sciences, for concepts of operations.

It should, therefore, not be surprising that we find ourselves confronting, as Ansell Pearson put it, a “weird point” in history “where it is no longer possible to determine whether technology as an extended phenotype is an expression of the desire of our genes or a sign of nature’s cultural conspiracy.”⁹ As the traditional distinctions between *Zoë*, *bios* and *technos*, strategy and tactics, friend and enemy, the hunter and the hunted collapse, and as the State grapples to discover, rather recover, different modes of being martial, we cannot help but agree with Ansell Pearson when he suggests that “[a] thinking of difference and repetition generates itself at the point in history when the most stereotypical and mechanical repetitions [that is to say, the eternal recurrence of the Same] appear to have taken over life completely.”¹⁰ Recall in this context the calls issued by Szafranski and other like-minded NCW theorists to change the way we think about war. This study contends that the theories and doctrines of NCW, which are suggestive of a *kehr* to the non-human, are reflective of such a point in history. But this *kehr* is one which is greatly in excess of the calls for epistemic changes that Szafranski, among others, insist on. Thus, the critical questions remain: What does thinking war differently entail? How can war be thought of . . . differently?

In an “Other” theater of war

As we begin to respond to these questions, we should not fail to recognize, acknowledge, and/or take into account the fact that “[w]hat is monstrous about the activity of thought is not the truth it discovers at the end of the journey, but the journey itself, in which the transportation of thought outside itself is always Dionysian and delirious.”¹¹ We should also consider ourselves forewarned that this Other thought involves an empiricism that is inextricably bound up with the creation of concepts, which serve to propel thought “outside” and in the throwing off the chains of anthropological predicates.¹² Thus, to think war outside the circumscription of the political, that is to say, to *not* think war human(e)ly, or even Reason-ably,

would entail not simply thinking war differently, but to think differently as well. Among other things, such an exercise would also entail a problematization of not simply war as we know it, but also, at least tacitly, a re-problematization of the grammar that underwrites, among other things, the Real.

Let us begin by considering seriously a fundamental, yet often overlooked, question that Deleuze and Guattari consistently pose in their individual and collective works: "What is philosophy?" At first glance, their answer, which holds that "philosophy is the art of forming, inventing, and fabricating concepts,"¹³ appears to be deceptively simple. Yet matters are more complex for the "forming, inventing, and fabricating of concepts" are certainly not simple acts as they involve taking "note of the question . . . its moment, its occasion and circumstances, its landscapes and personae, its conditions and unknowns."¹⁴ This is a common refrain that runs through Deleuze's philosophical works. Thus, as Boundas points out:

Deleuze's ontology is a rigorous attempt to think of process and metamorphosis – becoming – not as a transition or transformation from one substance to another or a movement from one point to another, but rather as an attempt to think of the real as a process. It presupposes, therefore, an initial substitution of forces for substances and things, and of (transversal) lines for points.¹⁵

The fundamental concepts that underwrite this Deleuzian philosophy of process and transformation are, of course, "becoming" and "difference" where the former "is the very dynamism of change, situated between heterogeneous terms and tending towards no particular goal,"¹⁶ while the latter "is not a difference established *post quo* between two identities . . . [rather] . . . [t]he ontological primacy . . . Deleuze gives difference can no longer be sublated or eliminated by either resemblance, analogy, or the labour of the negative."¹⁷ These twin concepts which, we should be careful to note, are the "means by which we move beyond what we experience so that we can think of new possibilities,"¹⁸ allows us to develop a response to the challenge – contra the dominant ethic of traditional Western philosophy – to "create a system that contains its own aleatory or paradoxical elements, elements that are both inside and outside, ordering and disordering."¹⁹

Rhizomes: A concept of operations

Deleuze, for the most part, ruins representation by diagramming an ontology that commits

to perceive life . . . [as] . . . connection and relation, but the outcome or event of those relations is not determined in advance by intrinsic properties . . . life is both that which requires some form of order and system . . . *and* that which opens the system, for life is just that power *to differ* from which concepts emerge but that can never be included in the extension of any concept.²⁰

Based on this ontological insight, Deleuze and Guattari present us with the concept of the Rhizome. Coleman suggests that "'Rhizome' describes the connections that

occur between the most disparate and the most similar of objects, places, and people; the strange chain of events that link people.”²¹ Thus, for Deleuze and Guattari, the rhizome is a concept that maps – as differentiated from it being a map of – processes and networkings, and the transversal movements of thought without any fixed points of reference. At the heart of the concept of the rhizome, therefore, lies a sense of movement that is perpetually de-centering, destabilizing which, for Deleuze and Guattari, is a creative gesture thus leading them to say: “Write, form a rhizome, increase your territory . . . extend the light of flight.”²² The critical question of course is: what does it mean to “write” or “form” a rhizome? Put differently, what are conditions of possibility of rhizomes?

Deleuze and Guattari draw our attention to what they refer to as a “plane of immanence” which, they assert, “is a table, a plateau, or a slice; it is a plane of consistency or, more accurately, the plane of immanence of concepts.”²³ They also caution us to avoid confusing concepts and the plane of immanence for they insist that it (the plane of immanence) “is neither a concept nor the concept of all concepts.”²⁴ Deleuze and Guattari provide us with further clues as to the nature of this plane. The plane of immanence is, according to them,

formless . . . neither surface nor volume . . . the horizon of events, the reservoir or reserve of purely conceptual events: not the relative horizon that functions as a limit, which changes with an observer and encloses observable states of affairs . . . [it is] . . . the absolute horizon that functions as a limit, independent of any observer . . . it is the indivisible milieu in which concepts are distributed without breaking up its continuity or integrity . . . The plane is like a desert that concepts populate without dividing up.²⁵

Further, the plane of immanence, which Deleuze and Guattari have variously referred to as a plateau and a milieu, is “vibratory, in other words, a block of space-time constituted by the periodic repetition of the component”²⁶ wherein exchanges between multiplicities at the virtual and intensive registers take place.²⁷ Critically, Deleuze and Guattari also advise us that the plane of immanence has two facets – *Nous* and *Physis* – which account for

why there are always many infinite movements caught within each other, each folded in the others, so that the return of one instantaneously relaunches another in such a way that the plane of immanence is ceaselessly woven, like a gigantic shuttle.²⁸

In this way, the plane of immanence “envelopes and distributes, without identifying, the heterogeneities that make up the world . . . [and in this way, it necessarily entails] a positive affirmation of the divergence of series.”²⁹ It is also important to note that these infinite movements are further characterized by their “infinite speed, such that the particles, forms and entities that populate it emerge only to disappear immediately, leaving behind no consistency, reference or any determinate consequences.”³⁰ To understand this condition as being chaotic or disorderly

would be to not only underestimate the creative (and destructive) productivity of the plane of immanence, it would also suggest a continuing adherence to the trinitarian series that sustains most, if not all, philosophies of representation and transcendence – God, World, and State (Man). Keeping in mind this qualification, it is possible, however, to understand the turbulent plane of immanence as being anterior to the face of chance and uncertainty that is familiar and amenable to representation.

Against this backdrop, rhizomes, therefore, are moving and morphing matrices that map, or, to be patently Deleuzian about it, diagram, by virtue of their very emergent presence, the processes that characterize the ebb and flow of the infinite movements that populate the plane of immanence. Put differently, “the rhizome is any network of things brought into contact with one another . . . the rhizomatic network is a mapping of forces that move and/or immobilize bodies.”³¹ As such, therefore, while rhizomes can serve to break up, interrupt, shatter, and overturn the rigid and binary structures of representative and transcendental models of thinking, they are also in-different to such transcendental modes of organization and thought.

Our reading of the history of military thought, and particularly that of NCW, shows us the Limit-Condition of these theories of war was and is not simply the chance and uncertainty that surfaces in the prosecution and conduct of war; it was and remains those startling interruptions, breaches, quakes, and tremors that seemed to arrive unannounced from someplace anterior to chance and uncertainty, and which threaten, at every turn, to reduce the prevailing theories of war into incoherence. Has there been any improvement in this situation with the introduction of ICTs and the “new sciences” in the emerging theorizations of war? The answer to this is a qualified “yes.” In the case of the NCW theorists who claim to be organizing their theories around chance and uncertainty, the mode of representation that has underwritten the theories of war in the Enlightenment and Romantic Eras – now empowered by technologies of stratification, hierarchical orderings based on information and communication dependency-structures – continues to hold them hostage and condemns them to find this anterior condition of chance and uncertainty virtually ungraspable. Thus, while their decidedly compromised Clausewitzian approach to NCW, riding the crest of the ICT wave, has progressed much in terms of achieving a fair degree of resilience against the vagaries of these twin disruptive phenomena when compared with the efforts of their illustrious predecessors, their own efforts, however, remain – what Deleuze refers to as – arborescent schemas as contrasted with the rhizomatic diagrams that Deleuze and Guattari suggest are applicable to processes, networkings and transversal movements that are in play on and across the plane of immanence.

But this does not mean that NCW as a *concept* of operations does not provide us with an opportunity to re-problematize war. It would only require us to move from an arborescent mode of problematization to a rhizomatic one. Thus, it is suggested, if – as we saw in the case of Clausewitz – the critical question in any investigation of war is about how to operate and organize in a condition of radical chance and uncertainty, that is to say, in decidedly aporetic conditions, then the rhizome is an

eminently suitable tool that can be productively used to reflect on precisely such a question.

Rhizomes serve to shatter and destabilize structures – particularly, rigid and binary structures. But this shattering and de-centering is not a negatively destructive activity. In other words, rhizomes shatter and destabilize by virtue of their productive (cap)ability to form and reform across and alongside the surface-plane of the plane of immanence where processes, involving infinite movements, unfold at infinite speed, and which necessarily involves *destruktion*, but also creation. Now, if the temporality of the plane of immanence is presumed to be that of Real Time (as distinct from Calculable Time), then rhizomes, it is tempting to conclude, are Behind Time as they are, however fleetingly, instant-frames that slow down the “infinite speed” of the unfolding processes of *destruktion* and creation thereby exposing the critical connections between events and occurrences (which are impossible to organize in any hierarchical way given the infinite speed and movement that they entail), and between the most disparate and the similar. It is important to recognize that these critical connections are not representations of the thing-in-itself (events and occurrences); rather, they are correspondences that are established between events and occurrences. In other words, these “infinite movements” – events and occurrences – are not stratified, layered, and hierarchical; rather, they are rhizomatic, that is to say, they are flat and distributive. This suggests that critical to the concept of the rhizome is a notion of a radical multiplicity. Radical because, unlike in the mode of hierarchical thinking, the multiplicity implicit in the rhizome does not take as a reference a unity. As will be immediately evident, this mode of organizing is quite different from the generally hierarchical modes of organizing that we are familiar with.

Even though, as we have seen, the NCW project is clustered around a strategic objective, which Admiral Cebrowski has identified for us in terms of transformation, its operational stance, however, is increasingly reflective of a combative stance against what Secretary Rumsfeld poetically termed as “the unknown unknowns.” This is, in part, due to the arborescent schema that NCW’s concept of operations is a part of, which is inextricably linked to the State (apparatus) from which, NCW (as a war machine) issues forth. Recall that in the case of NCW, the ideal mesh of nets comprised of advanced sensors and mobile weapon-systems are imagined as being global in spread and nature. They also suggest infinite movement at varying speeds, which contribute, indeed guarantee, the intrinsic stability of the system of nets that are so central to the NCW concept. Thus, it is not surprising to find that one of the core objectives of the NCW project is to develop and deploy a “common operational picture” that will facilitate a real-time “collective engagement capability.” A closer look, however, shows us that this is an illusion for equally implicit in the NCW *concept* of operations is an immobility that is equally necessary to maintain the integrity of the mesh of nets and to create the collective consciousness tools as mentioned earlier. Thus, the theories and doctrines of NCW, though paying lip service to the multiplicity (of events and occurrences) inherent in war are grounded in a Unity that serves as an anterior condition to the multiplicity that the NCW theories so zealously highlight. In other words, unlike

the multiplicity associated with rhizomes, which bear no relation to a Unity, the (false) multiplicity of NCW's mesh of nets serves as active constituents of a Unity. Thus, it was asserted that the *concept* of operations that form the bedrock of the NCW concept are partial to being global as opposed to being fragmentary and multiple. Given this, therefore, while we may be tempted to wholly identify the emerging NCW concept of operations with and as a rhizome, aside from acknowledging the superficial resemblance, we should resist this temptation. For our purposes, it is necessary to recognize that the core problematic associated with NCW's concept of operations is that it cannot remain in the rhizomatic mode which it resembles. This is because, as we have seen, to develop and maintain the Unity that is the imagined condition of possibility of NCW, its emerging concept of operations cannot help but strategize the environment. The rhizome, however, is anything but arboreal. Indeed, going by Deleuze and Guattari's usage of the concept, the rhizome is the counter-point of the arboreal schema. Whereas the latter, is ordered hierarchically from the greater to the lesser, from the superior to the subordinate, and from the transcendent to the particular, the former – as we have seen – is at best an ordering-in-progress that is flat and without depth.

As we have seen, the strategic objective of NCW – transformation – necessarily implies movement. In this context, it is important for us to note that the mobility associated with NCW's concept of operations is teleological in the sense that it must contribute to the creation, maintenance, and expansion of the arboreal scheme with its attendant hierarchies into which a defining force dictates the position and meaning of all else in the system.³² It is in this way that the NCW concept of operations promotes a suspension of animation, for the defining force of the NCW concept of operations cannot attend to any contrary or competing force – including, paradoxically, the force of transformation. Indeed, this is precisely how the NCW concept of operations, when mapped against planes of immanence, strives to reduce the latter's processes into (strategic) histories of events and occurrences. This, the NCW concept of operations attempts to do by extracting the force of the processes of the plane of immanence thereby rendering them immobile, thus consigning them to stand-reserve. Contrarily, the rhizome does something quite different. Instead of confining the processes of the plane of immanence, or reducing them to stand-reserve, the rhizome highlights the force of such processes. In other words, rhizomes thrive on the play of forces. In this sense, the instant-frames that we may read off the map that rhizomes generate are less points of immobility, which we are most familiar with as fixed points of reference; rather they are signatures of the locales where the intensity of force morphs, emerges, and dissolves. It is for this reason that rhizomes, when cast against the plane of immanence, are not behind time. Rather, they are *on* time, unfolding in and across the plane of immanence.

The curious thing to note in our discussion of rhizomes and NCW's concept of operations is the obvious disconnect that emerges between Admiral Cebrowski's announcement of the strategic object of NCW – transformation – which can be read in its present-continuous form, and the transformation that is effected by the NCW concept of operations. As we have seen, the outcome of the employment of NCW's concept of operations, while certainly transforming the force of the processes on

the surface-plane of immanence, only succeeds in immobilizing it. It is this immobilization that stands as the conditions of possibility of what the NCW theories refer to as “common operational pictures.” Thus, NCW’s concepts of operations engage in transformations to immobilize.³³ But, on the other hand, if we take the Admiral’s statement in its present-continuous form – that is to say, if we understand transformation as an infinite process (possibly occurring at infinite speed) – then we are confronted with the possibility that the Admiral’s reference to transformation may also be read as a reference to the seething surface-plane of the plane of immanence that we have had occasion to examine.

Planes of immanence: Becoming-battlespace

By suggesting that the rhizome be considered a concept of operations, we have contrasted it with the more arborescent schematics of the concept of operations that the emerging NCW theories presume. Further, we have already identified the plane of immanence as being the condition in and on which rhizomes operate. This plane of immanence, which Deleuze and Guattari variously refer to as a plateau/plane/milieu, is “a surface upon which all events occur, where events are understood as chance, productive interactions between forces of all kinds. As such, it represents the field of becoming, a space containing all of the possibilities inherent in forces.”³⁴ While at first glance this may suggest that the plane of immanence is relatively easy to locate and relate to, this is not actually the case. This is because not only does Deleuze and Guattari use the plane in various ways but, confusingly, they also refer to The plane of immanence, which may be construed as the immanence of planes of immanence, which is crucially in excess of any particular plane of immanence that we may identify at a given point in time, and which is also simultaneously immanent to all possible planes of immanence. Thus, any consideration of planes of immanence will need to be entered into with caution.

There are two active considerations of the plane of immanence at play here: first in the sense of it (a plane of immanence) being infinite, and second, in the sense of a plane that is immanent to all planes which, while being different to all possible planes of immanence, is also identical to them. Furthermore, planes of immanence are troublesome to deal with as they are not only infinite, but they are also different from each other. Here, of course, we should pay heed to the “difference” that Deleuze invokes, which is different from the “difference” that we are more familiar with. The key point to note is that planes of immanence are always becoming-different thus establishing but also severing – this happening infinitely and at infinite speed – relations, economies, and shared characteristics with and in each other. In this context, it is important to note, the movement that marks infinite planes of immanence is a signature of what Deleuze and Guattari refer to as The plane of immanence – the immanent plane that is immanent not only to all planes but also to itself.

Now, Deleuze and Guattari tell us that “[f]rom chaos, Milieus and Rhythms are born.”³⁵ In other words, planes of immanence (which Deleuze and Guattari also refer to as milieus, plateaus) can trace their genesis to chaos. As an offspring of

chaos, planes “are open to chaos, which threatens them with exhaustion or intrusion.”³⁶ In this sense, therefore, it could be asserted that planes of immanence are faced, on at least one side, by chaos. In this sense, planes of immanence reflect the intensities of the forces of the chaos from which they arise. It is important to recognize that this reflection is not unidimensional; rather, it is an economy of relations which suggests that the consistency of the plane of immanence is marked by the ebb and flow of intensities of force that arise from within the chaos that planes of immanence emerge from and reside on. In other words, the economy of relations between chaos and planes of immanence is not marked by a lack of intensity at any point or instant; rather, varying intensities of force lend a peculiar consistency to not only the planes of immanence but also to their relations with chaos. It is this variation of intensities that manifests itself as the infinite speed and movement that characterizes planes of immanence. Thus, planes of immanence do not – indeed cannot – exercise proprietary rights over particular intensities; rather, the sudden and unexpected movements – this occurring infinitely – of the intensities of force affects all planes of immanence thereby lending a materiality to emergent events and occurrences, thus allowing for the establishing of critical connections and abrupt breaks within and between planes.

While this may convey an image of disruption and pandemonium on, in, and between planes of immanence, we should bear in mind Deleuze and Guattari’s cautionary note regarding the in-between that resides not only between planes of immanence, but also between chaos and planes of immanence. This is identified by Deleuze and Guattari as “rhythm.” If we think of chaos as a jumble of intensities of force, then rhythm is the coding-machine that codes these intensities of force with/in planes of immanence thereby lending, however transitorily, a consistency to them. Again, a degree of caution is warranted here. It is tempting to construe rhythm as an organizing principle of planes of immanence for, as mentioned earlier, rhythm is that which lends consistency to the planes of immanence. This is not accurate for, as Deleuze and Guattari advises us, “a milieu [plane/ plateau] does in fact exist by virtue of a periodic repetition, but one whose only effect is to produce a difference.”³⁷ Thus, what we have here is not a rhythm of consistency (marked by the repetition of the Same). Instead, what we have here is a consistent rhythm of difference which is the becoming-different that is the hallmark of planes of immanence.

Thus if we ask: Do planes of immanence display a rhythm? Is chaos rhythmic? – going by what Deleuze and Guattari have to say on the matter, the answer will be a qualified “no.”³⁸ This is because, Deleuze and Guattari, here quoting Bachelard, suggest that “*the link between truly active moments (rhythm) is always effected on a different plane from the one upon which the action is carried out.*”³⁹ Thus, while it is accurate to say that planes of immanence and chaos may be shown to be rhythmic, this perception of rhythm always takes place elsewhere because “[r]hythm is never on the same plane as that which has rhythm.”⁴⁰ Rhythm, as Deleuze and Guattari claim, is the in-between – in between chaos and planes of immanence, and between planes of immanence themselves.

What we have established thus far, therefore, is the following: Planes of immanence are formless. This formlessness is a commentary on both the form of a plane

and on the becoming-form that takes place with/in it. Planes of immanence, as we have also seen, while apparently seeming to share a seamless co-joining with chaos, actually share a mediated relationship with chaos. Rhythm is the intermediary between planes of immanence and chaos. As such, Rhythm is the periodicities (of difference) that intensities create which, in turn, “reflect” on the surface-plane of the planes of immanence. These periodicities of intensities are what is consistent in planes of immanence. Further, we have seen that planes of immanence are immanent to themselves. In other words, planes of immanence, which are perpetually in-difference – individually and collectively – with each other, are also, by virtue of this becoming-different (which is a connectivity between relations and not identities) – individually and collectively – “in” each other.

Our review of battlespace – in the NCW context – when cast against this backdrop brings to light a number of startling correspondences, which warrant our attention. Let us begin by recalling that the *battlespace* that the NCW theories discuss, as a net assessment, is an enlargement *and* magnification of the battlefield of classical military theory. This enlargement and magnification has ensured that the battlespace has spilled over the traditional battlefield, that is to say, it is in excess of the latter. This is not surprising because, as we have seen, whereas the traditional battlefield was largely grounded in the physical domain, the battlespace of the NCW theories is said to extend across the physical, cognitive and informational domains. This, as we have asserted elsewhere in this study, is the space of war in NCW terms.

Battlespace, in NCW terms, is a fluid ecology. In other words, constant movement occurring at the speed of light is the key characteristic of NCW’s battlespace. In and on this battlespace, threats are always decentered, diffused, and in-distinguishable, that is to say, they are always becoming-distinguishable. Thus, as we have seen, to address this emergent condition, which is also reflective of the operative concept of war in the NCW context, the evolving operational stance of the theories and doctrines of NCW is said to be akin to a swift elusive sword with compact and efficient logistical tails. Further, the battlespace of NCW also invokes intensities. Indeed, it is suggested that intensities constitute the battlespace and, in this way, they provide consistency to the battlespace. The theories and doctrines of NCW are much concerned about these intensities, for they, like Deleuze and Guattari, see intensities as instances of the connectivity between relations as compared to those between identities. As we have seen, the theory of effects-based operations (EBOs) is grounded in such an understanding of the battlespace. Further, like in the case of planes of immanence, the battlespace also exhibits a rhythm – a tempo of operations – which, in the context of planes of immanence, is the inter-mediary between them and chaos. We have also seen how rhythm is the vibratory expression of the intensities of force. The same can be said to be applicable in the case of the battlespace wherein, the tempo of operations which, in the NCW context, relate to not only the directed flow of events and processes as mobilized by a strategic ensemble – in the manner in which the EBO theory suggests – but also to the free flow of events and processes that are pure expressions of force-intensities. What this means, therefore, is that the tempo of operations that the NCW concept of operations refers to also reflect (thereby giving us an inti-

mation of) an anterior condition that, like in the case of planes of immanence, is chaos.

When considered in the context of a State-centric strategic ensemble, however, NCW's concept of the battlespace appears crippled. Thus we find that the desirability to slow down the infinite speed of infinite movements by various ICT-driven modes of representation extracts from the battlespace the intensity that gives it its consistency in the first place. Thus, we find NCW theorists speaking of maximum mobility in limited space where the latter is a function of, and restricted to, the spread of nets and meshes that are so critical to the theories and doctrines of NCW. This might seem to be in contradiction with what was previously stated – the theories and doctrines of NCW are cognizant of intensities (of force) as being connections between relations rather than being between identities. This contradiction, however, is deceptive because while it is true that NCW theories see connections as being relations which may or may not be influenced – as is the case in the context of effects-based operations – this only holds true if the system in which such relations are conceptualized is considered as being a closed one. In other words, NCW theorists begin from the premise that their operational space, that is to say, the battlespace, is *not* open ended, as is the case with planes of immanence; rather, they presume that the battlespace is a closed space which allows for the theoretical possibility of perfect calculability. Thus, in a manner reminiscent of Clausewitz, the NCW theorists (at least thus far) while not avoiding or deferring the problem posed by infinite speed and movements (which may be viably considered as being contributory to the chance and uncertainty that Clausewitz complained about), respond to it by creating and deploying finer nets and meshes that serve to increase the resolution of that which they map thereby slowing, and optimally bringing to a standstill, the infinite speed and movements of intensities.

In our discussion on Clausewitz and his architectonic on war, we discovered that the principle philosophical question that bedeviled Clausewitz was how to organize in the face of chance and uncertainty. We further saw how Clausewitz deftly relegated the problems posed by the anteriority of chance and uncertainty by affirming *Friktion* that made its presence felt on the battlefield. The task of dealing with this, of course, was assigned by Clausewitz to not only meticulous planning, but also to the genius and the underlying rational order of politics that he girded the phenomenon of war with. Riding on the back of the rapidly proliferating ICTs and the “new sciences,” the theories and doctrines of NCW have visualized the battlespace as not only the space of battle, but also as the condition of possibility of war itself. Thus, to say that the NCW theories underestimate the vagaries of chance and uncertainty would also be an error. Indeed, as we have seen, the NCW theories organize themselves around chance and uncertainty. But the mode of this organization is not liberating; rather, it is constrictive. In other words, despite the fact that the emerging ICTs and the “new sciences” have done much to break down the mode of representation associated with the Real and in its place have resorted to creating new and varied “realities” which now, more than ever, have begun to account for chance and uncertainty, the strategic logic of the State-centric NCW project, as we have seen, tends to organize these disruptive phenomena in what can only be described as a

closed system. This is most evident in the NCW version of battlespace. The implicit promise of the State-centric NCW project thus is to address the twin phenomena of chance and uncertainty by progressively undermining their ability to interrupt, disrupt, and overturn – which is how the NCW theories understand threats-in-being – by exhausting them of the intensity of their force. This, it is worth repeating, is attempted by the very concept of operations that NCW presumes.

Assemblages and apparatuses of war

Rhizomes, we previously noted, instead of confining the processes of the plane(s) of immanence, or reducing them to stand(ing)-reserve, highlight the force of such processes. In other words, rhizomes thrive on the play of forces. Further, we observed that the instant-frames that we may read off the map that rhizomes generate are not points of immobility, rather they are signatures of locales where the intensity of force morphs, emerges and dissolves. It will be obvious from our discussion on rhizomes that the intensities (of the forces of processes) that are “reflected” on the plane of immanence are maps without any tangible consistency. In other words, rhizomes, when perceived as outcomes, that is to say, as maps, are without any density. This is because, as mentioned earlier, rhizomes are the signatures of the intensities that forces and their related processes exhibit. In this sense, they are a-systemic. The intensities of forces that rhizomes map cannot be considered to be a system of any kind given the infinite movement and infinite speed that characterizes the agitation of forces. Given this, therefore, the pertinent question to ask would be the following: How is organization possible in a condition of movement and intensity?

Deleuze and Guattari devise the “assemblage” as a direct response to this question. Bonta and Protevi describe an “assemblage” as “an intensive network . . . displaying consistency or emergent effects by tapping into the ability of self-ordering forces of heterogeneous material to mesh together.”⁴¹ To clarify matters and to bring them in line with the requirements of this study, let us briefly examine the implications of Bonta and Protevi’s use of the terms “emergence and consistency.” Drawing on the work done by Thompson and Varela, Bonta and Protevi suggest that emergence may be described as the “mutual constitution of local-to-global or ‘upward’ causality that produces focused systematic behavior and the global-to-local or ‘downward’ causality that constrains the local interactions of components.”⁴² Intimately related to this is the notion of consistency, which may be understood as the progressive congealing of intensive and far-from-equilibrium forces and processes towards a stage of equilibrium.⁴³ Thus, when considered in the context of the turbulence of the surface-plane of the plane of immanence, emergence and consistency may be understood as being the engines that drive the processes of becoming. The critical issue about emergence in particular is the phase-state changes that are in motion as matter moves from a more diffused state to one that is amenable to being stratified and systematized. We should also note that as such phase-state changes take place, what varies is the consistency that each phase-state involves. This is where matters get complicated. It is tempting to limit

the notion of consistency not only to a single matter or substance that may be undergoing a phase-state change, but also to a homogeneous state which is at a ready-state equilibrium. By presuming this, however, we run the risk of ignoring the intensive morphogenetic processes that constitute even the most elementary atoms and particles.⁴⁴ Let us examine these matters in a little more detail.

Dupréel, Deleuze and Guattari observed, proposed a theory of consolidation in which “he demonstrated that life went not from a center to an exteriority, but from an exterior to an interior, or rather from a discrete and fuzzy aggregate to its consolidation.”⁴⁵ Deleuze and Guattari draw our attention to three implications that result from Dupréel’s theory, which are critical in the consideration of consistency:

First, that there is no beginning from which a linear sequence would derive, but rather densifications, intensifications, reinforcements, injections, showering, like so many intercalary events . . . Second . . . there must be an arrangement of intervals, a distribution of inequalities, such that it is sometimes necessary to . . . consolidate. Third, there is a superimposition of disparate rhythms, an articulation from within of an interrhythmicity, with no imposition of meter or cadence.⁴⁶

Thus, Deleuze and Guattari suggest, consistency “produces consolidated aggregates, of succession as well as of coexistence, by means of the three factors . . . intercalated elements, intervals, and articulations of superposition.”⁴⁷ Implicit in this is a process – rather multiple processes – which involves a coding of the elements which results in the consolidation of aggregates. The process of coding, however, is not a simple one for it involves an infinite set of heterogeneities that aggregate and disperse simultaneously. This is the phenomenon of emergence, which is marked not only by the heterogeneity of its processes, but also by the heterogeneities of relations that it establishes. Thus, the processes of emergence whose outcome is the establishment of consistencies do not necessarily result in the formation of rigid structures though, it should be mentioned, the processes of emergence when overcoded have a proclivity to very quickly transform the normally heterogeneous into a homogeneous condition. As we will see, this is intimately related to the emergence of structures and of apparatuses.

Against this background, therefore, assemblages, which we have already identified as being an “intensive network that display a consistency by meshing together heterogeneous materials,” may be understood in two generic ways. First, as a contingent arrangement or aggregation of heterogeneous elements that share intensive connections with each other: in this form, assemblages are on the verge of becoming structures. What prevents them from consolidating into such rigid entities is the force of the intensities that come together as an aggregate. Given that this aggregation is purely contingent, the structural outline of the assemblage is therefore not guaranteed. Put differently, it could be said that an assemblage – meant in the aforementioned sense – is the failure of the culmination of a “becoming-structure” process. Thus, whatever consistency that develops in such an assemblage is equally transient and disperses as the assemblage de-constructs, but only to reform as

another assemblage with a very different set of intensities and levels of consistency. In the second instance, however, an assemblage may be considered as being a singular process that is unidirectional in the sense that it follows a linear path towards the establishment of a structure. In this scenario, assemblages begin to acquire consistencies that resist dispersion by exhausting the intensity of the force of the elements that aggregate as an assemblage. In this latter form, assemblages become apparatuses, which overcode and channel the force of aggregating elements. In the process, the intensive relations between the aggregating elements are calcified and hardened thus eventually resisting – though not always successfully – the free flow of forces and their intensities.

In the NCW context, the doctrine of swarming, or that of battleswarms, closely approximates assemblages. Recall that swarming on the battlefield is

seemingly amorphous, but it is a deliberately structured, coordinated, strategic way to strike from all directions, by means of a sustainable pulsing of force . . . It will work best – perhaps it will only work – if it is designed mainly around the deployment of myriad, small, dispersed, networked maneuver units.⁴⁸

What is interesting about the doctrine of swarming is the direct reference that is made to the making of assemblages, comprising sensors and mobile weapon-platforms that are designed not only to strike an adversary, but to also form part of a sensory organization.⁴⁹ The critical point to consider is that given the dispersed nature of threats that are perceived to be the new face of threats, swarms are, ideally, contingent organizations that take form based on the threat that is meant to be dealt with. In other words, working from the premise that threats are multi-varied, the forms that battleswarms assume are not pre-determined; rather, they are configured to respond to the particular threats that their forms are designed to meet and quell. But this should not suggest that there is a bank or a database of forms that swarms can draw from. What this implies is that threats, in no small measure, co-constitute the martial form of the swarms that combat them. It is in this sense that battleswarms come to closely resemble assemblages. Indeed, as such, at least superficially, battleswarms fulfill most of the general features of assemblages. Thus, for example, when configured to meet a threat, battleswarms display a consistency which is defined by the aggregation of the constituent elements – sensors and weapons – of the battleswarm in question. Further, particular configurations of battleswarms are just that – particularities. In other words, particular formations of battleswarms are specific to the threats that they address and, in a general sense, such forms and formations are never repeated. In this sense, the structures of battleswarms are contingent on the threats that they respond to. As and when the threats are mitigated, the assemblage of sensors and weapons that constitute the battleswarm disperse only to re-assemble differently when responding to another threat. In this connection, it is also interesting to note that like the assemblages that we examined earlier, battleswarms also display an interior-intensive relation – based on capabilities – that holds its constituent units in a loose network. This is distinct shift in the way militaries are historically organized and, as such, reflect the

innovative organizational potentials that the theories and doctrines of NCW have brought about. Thus, Edwards can write, “[a] doctrine based on swarming calls for . . . radical changes in equipment and organization.”⁵⁰

The interesting thing about battleswarms (as assemblages) is that unlike those assemblages that morph into apparatuses by densifying the nascent consistencies that hold assemblages in a tenuous network, battleswarms only reaffirm their fragmentary and dispersed natures. But equally, and this is again a signature of the paradox that afflicts the theories and doctrines of NCW, the objective of battleswarms is to reduce this heterogeneity into a homogeneous ecology which involves the liquidation of a multiplicity of singular threats. It needs to be reiterated that the fragmentary posture adopted by battleswarms is only possible in ecologies that become homogeneous. Thus, while battleswarms operate as assemblages, they can only do so in closed systems, or at least by presuming that their operational ecologies will increasingly become homogeneous or closed in short order. There is a link that can be drawn between this tendency of battleswarms (in the NCW context) and the State from which it issues forth and it warrants a brief examination.

As we have seen previously, an increase in the degree of consistency coupled with a closure from and to the transversal flow of forces and their intensities, results in assemblages quickly morphing into rigid structures by eliminating the intensive intensities that marks the heterogeneous elements that constitute it. Apparatuses are formed in this manner. The key point to note is that such apparatuses carry within themselves a function of capture or coding, which serves to reduce the heterogeneity of assemblages into homogenous elements which are then amenable to being organized and categorized. In other words, the radical mobility that characterizes the heterogeneity of elements that constitute assemblages is, in the context of apparatuses, rendered immobile thereby allowing for them to be channeled into a centralized organism or system.⁵¹ In this sense, apparatuses are by default those entities “whereby alien and rogue semiotics and . . . assemblages are captured and overcoded, engulfed by a transcendent force that striates all reality: space, time, body, culture, nature.”⁵²

Now, Deleuze and Guattari, while insisting that “there has always been a State, quite perfect, quite complete,”⁵³ also assert that “the State has always been in a relation with the outside and is inconceivable independent of that relationship.”⁵⁴ The exercise of this relationship, of course, is effected by striation, which Deleuze and Guattari refer to as one of the fundamental tasks of States and, going by their exegesis on the State, it would seem that States are unable to resist this function of coding and striating. Thus, it is not surprising that Deleuze and Guattari identify the State as an apparatus. However, Deleuze and Guattari, following the work of Clastres, also assert that they “do not see how the State can be explained by what it presupposes.”⁵⁵ And, what is this presupposition? It is the inconceivability of the independence of the State apparatus to “the outside.” Indeed, Deleuze and Guattari also insist that “[t]he state seems to rise up in a single stroke, in an imperial form, and does not depend on progressive factors. Its on-the-spot emergence is like a stroke of genius, the birth of Athena.”⁵⁶ Naturally, we need to query Deleuze and Guattari about this startling claim. Thus, for example, we need to ask: If

the State did indeed arise in a single stroke, did it do so as an apparatus? In other words, can apparatuses emerge on-the-spot? If we go by our discussion on assemblages and apparatuses, then we must conclude that the on-the-spot emergence of apparatuses is, to say the least, mystifying, unless of course the processes by which apparatuses assume a materiality remain hidden and all that is discernable is the immediate, indeed magical, emergence of apparatuses. But this still ignores the processes by which apparatuses are formed. Thus, we must remain skeptical of the claims made by Deleuze and Guattari about the “magical” emergence of the State. This, as we will see, has a significant impact on how Deleuze and Guattari discuss, among other things, war machines and war and their relation to the State.

For the moment, however, we should not fail to acknowledge the advantages that have accrued to our project of attempting to read the emerging theories and doctrines of NCW with Deleuze and Guattari. Deleuze and Guattari show us how by adopting a conceptual stance that prioritizes connection and relation, and one which recognizes that outcomes (events and occurrences) of those relations are not determined in advance by intrinsic properties, we are able to, at the very least, attempt a re-problematization of the concept of war characterized by forces, intensities, flows, and networks which, in the context of this study, is reflective of the *intensiveness* of war.

On war and war machines: Interrogating the Deleuze–Guattarian thesis

Deleuze and Guattari, based on their reading of Dumézil’s work on Indo-European mythology,⁵⁷ observe that:

Political sovereignty, or domination, has two heads: the magician-king and the jurist-priest. Rex and flamen, raj and Brahman, Romulus and Numa, Varuna and Mitra, the despot and the legislator, the binder and the organizer. Undoubtedly, these two poles stand in opposition term by term . . . But their opposition is only relative; they function as a pair . . . as though they expressed a division of the One or constituted in themselves a sovereign unity.⁵⁸

Further, they assert:

Lacking a mythology of conflict . . . [t]he two together exhaust the field of function. They are the principal elements of a State apparatus that proceeds by a One-Two, distributes binary distinctions . . . It is a double articulation that makes the State apparatus into a *stratum*.⁵⁹

Deleuze and Guattari then begin to draw their diagram of the State apparatus by contrasting it to not simply the war machine, but also (often in an implicit key) to war which, as they state, “is not contained within this apparatus.”⁶⁰ Thus, for Deleuze and Guattari:

Either, the State has at its disposal a violence that is not channeled through war – either it uses police officers and jailers in place of warriors, has no arms and no need of them, operates by immediate, magical capture, seizes and binds, preventing all combat – *or*, the State acquires an army, but in a way that presupposes a juridical integration of war and the organization of a military function. As for the war machine in itself, it seems to be irreducible to the State apparatus, to be outside its sovereignty and prior to its law.⁶¹

It is necessary to pay close attention to Deleuze and Guattari's words for our interest lies not simply in the war machine that Deleuze and Guattari describe and the economy of relations that it shares with the State apparatus, but also in their assertion that the activity of the State (apparatus) that we generally construe as war, is *not* war, but *a different kind of violence* for, in their words, war "comes from elsewhere."⁶² To all intents and purposes, for Deleuze and Guattari, war – like the war machine – is (1) outside law (that is to say, located outside the ambit of the juridical network that the State apparatus produces); thus, (2) outside the sovereignty of the State apparatus; and, in the last instance, (3) irreducible to the State apparatus.⁶³ To the extent that the State apparatus *makes* the war machine its own, it does so by capturing/ensnaring/seducing/stratifying war with/in its *thanato-juridical* networks, which serve, rather strive, to integrate the war machine (and by extension, war) to the State apparatus. Then, of course, there is the curious case of police power. Let us consider these matters in some detail.

Deleuze and Guattari further suggest that a State (apparatus) exhibits, among other things, the following features: (1) It lacks a mythology of conflict, which we should be careful to note, does not, and should not, suggest the lack of a mythologizing (cap)ability; and (2) driven by two principle elements – represented, for example, by Mitra and Varuna – State apparatuses exhibit/betray a One-Two distribution/movement. It is instructive to note that without denying the generally anthropocentric organizing principles of the more common "mythologies of conflict" (that is to say, our *strategic histories*), it is possible to contextualize these *strategic histories* against the One-Two movement that Deleuze and Guattari ascribe to the State apparatus. Indeed, Deleuze and Guattari's points of reference – "Rex and flamen, raj and Brahman, Romulus and Numa, Varuna and Mitra, the despot and the legislator, the binder and the organizer" – allow us to chart the progression of these strategic histories.

We should also remind ourselves that Deleuze and Guattari make these observations in the context of "political sovereignty or domination." Thus, the emphasis that they lay on the Absolute binary distribution of the State apparatus – "*Either*, the State . . . *or*, the State" – may tempt us to dedicate our attention to what they suggest is *the* singular expression of the State (apparatus) brought into focus by its One-Two distribution/movement – *either* "pure" police power *or* "pure" military power. Now, from what Deleuze and Guattari suggest, it would appear that the State apparatus' expression of violence is pendulum-like – swinging from police power to military power and back – and is relative to the contingent present. This directly corresponds to the One-Two distribution that Deleuze and Guattari draw our

attention to. There is, however, another possibility. As the One, that is to say, as the (sovereign) Unity, the State apparatus may also be said to express itself in a third way, which is fundamentally indistinguishable from either military power or police power. To appreciate the significance of the indistinguishability between military and police power, it will be beneficial to cast an eye on the etymological backdrop of a word that Deleuze and Guattari associate with the State – “stratum.” Etymologically, the word “stratum” suggests a

“horizontal layer,” 1599, from *Mod.L.*, special use of *L.* *stratum* “thing spread out, coverlet, pavement,” from neut. pp. of *sternere* “to spread out, lay down, stretch out,” from PIE **stre-to-* “to stretch, extend,” from base **stere-* “to spread, extend, stretch out.”⁶⁴

Note also the close relationship *stratum* shares with *structure*, which since

c.1440, [has been identified as an] “action or process of building or construction,” from *L.* *structura* “a fitting together, adjustment, building,” from *strutus*, pp. of *struere* “to pile, build, assemble,” related to *strues* “heap,” from PIE **stere-* “to spread, extend, stretch out” (cf. *Skt.* *strnōti* “strews, throws down”; *Avestan* *star-* “to spread out, stretch out”; *Gk.* *stornymi* “strew,” *stroma* “bedding, mattress,” *sternon* “breast, breastbone.”)⁶⁵

Based on this admittedly cursory etymological overview, Deleuze and Guattari’s use of the word “stratum” is instructive. It is clear that Deleuze and Guattari – by referring to the binary distributions of the State (apparatus) – want to draw our attention to a becoming-structure (becoming-State apparatus) by a One-Two movement. At the heart of the matter is the question of movement and it is important to recognize that it is not the more qualified movement-as-direction, rather, it is movement-as-distribution, as is reflected in the PIE roots of “stratum” – “to spread, expand.” Thus, it could be said that the movement of the State (apparatus), which is *Mitra*’s and *Varuna*’s movement, is an expansive one and that, as such, it lends to the consistency of the State as an apparatus/structure to form a stratum. But can such a consistency be achieved and maintained when the pendulum of force (expressed as military and police power) swings violently from one extreme to another? To respond to this question, we must first address the issue of whether the movement of the State apparatus is indeed as abrupt and binary as Deleuze and Guattari’s “binary distribution” suggests.

It is important to recognize that the way in which Deleuze and Guattari present their diagram of the State apparatus, the phase-state wherein the State apparatus expresses “pure” police power or “pure” military power may be considered as being end-states, that is to say, they are – in their individual ways – the maximal expressions of the State apparatus. Thus, we cannot fault Deleuze and Guattari when they overtly suggest that the State apparatus can only express either military power or police power. Perhaps this goes some way to explain an assertion by Deleuze and Guattari, which we have had occasion to note earlier. In the context of war machines, Deleuze and Guattari noted that the

worldwide war machine, which in a way reissues from the States, displays two successive figures . . . the first that of fascism, which makes war an unlimited movement with no other aim than itself, and the second . . . the war machine reforms smooth space that now claims to control, to surround the entire earth.⁶⁶

This corresponds directly with the elements of the One-Two movement that Deleuze and Guattari allude to. Thus, in keeping with the “unlimited movement” of the State apparatus (“which makes war” and which Deleuze and Guattari say is “fascism”) and its reformation of smooth space, military and police power represent the essential movement of the State apparatus itself. But matters are more deceptive and complex. Deleuze and Guattari suggest that the twin movement of the State apparatus (expressed in terms of military and police power) are successive, that is to say, they follow each other. Further, Deleuze and Guattari’s words also suggest that the *first movement* of the State apparatus is that of military power which, Deleuze and Guattari assert, is the signature of the appropriation of war by the State apparatus and of its enmeshing by means of its juridical networks. Only after this does the State apparatus express itself in terms of police power, which reforms smooth space by striating it. In other words, it would appear that the State apparatus first captures space by exercising military power, which it then reforms using police power.⁶⁷ The question, therefore, arises whether the State apparatus can express itself in both ways simultaneously and non-sequentially? Indeed, in the Age (and context) of NCW, would it not be more appropriate to discuss the expression of the State solely in its originary terms as the One-Unity, that is to say, in terms of the in-distinguishability of the State apparatus’ police and military powers?

It was Foucault who alerted us to the violence that a State apparatus expresses by means of, among other things, its juridical networks.⁶⁸ While this is certainly true of military power, when compared to police power we find that the latter shares an immediacy with the juridical networks which is not the case with the former. The critical point here, however, is that either way the expression of the State apparatus, in the form of juridical networks, is always-already violent. The significant qualification within this expression of violence lies in precisely how the expression of police power provides, indeed contextualizes, the possibility of a State apparatus’ expression of military power. In this way, it could be said that unlike the more common thematic of International Relations, the *telos* of military power does not lie in peace – rather, it lies in the affirmation of the originary violence of the State apparatus expressed as police power. In other words, the State apparatus’ expression of military power only serves to reinforce its expression of police power. What this would suggest is that unlike the war that the State apparatus manages to integrate (from the outside, or the elsewhere) with/in its juridical networks, the ecology of police power is local to the State apparatus. It is pre-integrated and thus, it “seizes and binds, preventing all combat . . . captures by magic . . . has no arms and no need of them.”⁶⁹ If one can indeed ascribe a *telos* to police power, it would be nothing less than an unconditional (re)affirmation of itself in the form of what Deleuze and Guattari perceptively identify as a “terrifying peace.” Thus, when the State apparatus violently – this economy of relations from State-side being an expression of

violence a military power—attempts to *gestell* “that which comes from elsewhere” with/in itself, it wages war, but it does so only to affirm the originary violent expression of the State apparatus.⁷⁰

We have already established that the State apparatus, which Deleuze and Guattari refer to in originary terms as “the One . . . Unity,” expresses pure violence which, when referring to the One-Unity, remains unqualified as either police or military power. In other words, police power and military power, when expressed by the State, only serve as qualifications (or aspects) of the essential ontological expression of the State apparatus – violence. Put differently, we could say that the State apparatus – as a stratum – expresses a violence that is (1) not only different from that of war, but (2) is one wherein military and police power are indistinguishable from one another. The State apparatus, expressing its originary violence as both police and military power, thus “expands,” that is to say, it moves laterally, but imperially, by *making war* to capture space – smooth space – which it then reforms as striated space by the exercising of police power. From Deleuze and Guattari’s statements on the matter we know that military power is the result of the integration of war by juridical networks. This suggests that war, like an unwelcome intruder, who “comes from elsewhere,” somehow comes in contact with the State apparatus which, in a combative (but defensive) mode, attempts to reduce the force of war by containing it (by first capturing it) within juridical networks. On the other hand, it could also mean that the originary expression of the State apparatus – as an assemblage of juridical networks – is always-already violent and offensively-oriented. In the latter case, the State apparatus aggressively, or more accurately, in an offensive mode, reaches out *in/to war* and seeks to tame it, to enframe it, to *ge-stell* it – by integrating it.

The above discussion makes it clear that the State apparatus, which is not simply born *as*, but which also lives *as* violence exhibits an originary violence that is *pre* qualification. It is important to correlate this to the war that the State apparatus comes in contact with. Reid, in this context, provides a valuable insight. He states:

The value of Dumézil to Deleuze is twofold. First, Dumézil demonstrates that the attempt to strategise a relation between the state and the war machine is a manoeuvre found repeatedly in the mythological representations of sovereignty dating back to the earliest records of Indo-European civilisation. Second, he demonstrates that in spite of this attempt of the state to strategise a relation between itself and the war machine, the latter remains in a “milieu of exteriority,” located outside of the state apparatus and possessing the metamorphic power which Deleuze argues accrues to alterity.⁷¹

Taking care so as to avoid falling into the banality of assessing the validity of Dumézil’s “colonial” account of pre-Vedic and Vedic mythologies, which in itself is highly problematic, let us focus instead on the “milieu of exteriority” wherein, as Reid points out, Deleuze and Guattari locate the war machine. It is also necessary to forewarn ourselves that our approach, in this context, will be unconventional – an indirect approach – and will entail looking closely at how Deleuze and Guattari

are able to posit what appears to be a radically non-human approach to the question of war, war machines, and State apparatuses.

Deleuze and Guattari suggest that that the One-Two movement of the State (military power and police power) leads in once sense to Fascism (more commonly, as instances of micro-fascism), while on the other, it leads to “unlimited movement.” Now, this is where matters really get complicated. The One-Two movement that Deleuze and Guattari associate with the State apparatus is itself an “unlimited movement” for if it were otherwise it would signal the atrophying of the State apparatus. Thus, we are forced to ask: Is this unlimited movement creatively unlimited, or is it the movement associated with the eternal recurrence of the Same— in which case, it is no different from the fascism that Deleuze and Guattari refer to. Why is this question being posed here? Because, (1) perpetual war— the condition of fascism that Deleuze and Guattari refer to— is unlimited movement and (2) unlimited movement which, paradoxically, is only possible in smoothspace, leads to the condition of terrifying peace where the State ends up as one of the appendages of the war machine which, while admittedly is a supra-state condition, is also a condition that cannot be wholly outside the circumscription of the State (that is why the State ends up as being an appendage, that is, a part of the whole). Either way, it ends up being a fascistic condition which, while being in excess of the State, remains grounded in and with it. All this is in accordance with what Deleuze and Guattari suggest, but then, if this argument holds, we need to recognize that the war machine is not a creative creature; rather it is a fascistic creature— in both its guises— as military and police power.

Before we get into the business of interrogating Deleuze and Guattari’s account of the war machine, let us clear up one small matter. Deleuze and Guattari would like us to believe that the consequence of the war machine running amok is that the State becomes an appendage to the war machine, the prelude to the era of terrifying peace, more terrifying than “total war.” The way Deleuze and Guattari put it, it would suggest that prior to the war machine making the State its appendage, the State (as an apparatus) had only one form of violence at its disposal— police power. It is only after the State comes in contact with its Other, that is to say, only after the State comes in contact with the Nomad, does it begin to understand that Other violence embodied in war. But then again, Deleuze and Guattari state that the State moves in a One-Two step— police power and military power. So, we would assume that this One-Two movement is only possible after the State comes in contact with the Nomad and after it has appropriated the “war” that the Nomad brings with it. And, how does the State acquire this military power? It does so by enmeshing “war” (that which is introduced to the State by the Nomad) within its *thanato*-politico-juridical networks, which we should not forget are the sinews of its police power. So, where does this leave the war machine, which is “irreducible to the State apparatus . . . outside its sovereignty and prior to its law”? The follow-up question to this, of course, is related to “war” itself, which, if we are to believe Deleuze and Guattari, is the endemic condition of the Nomad who the state seeks to “territorialize.”

To pose a workable response to these questions, we will need to take a step back and look at Deleuze and Guattari’s explanation of what the war machine is. In

simple terms, the war machine is an abstract machine, that is to say, it is an assemblage that, while fluid, also displays a peculiar kind of a coherence to it, albeit a coherence that is very different from that which the State as an apparatus exhibits, which is grounded in Reason. Additionally, the war machine “does not have war as its primary object but as its second-order, supplementary or synthetic objective.”⁷² But in light of what has been discussed, the two questions that we have posed earlier may be revised in the following manner: First, is or is not the war machine an assemblage of a completely different order from that of the State? Deleuze and Guattari would like us to believe so.⁷³ What we have seen thus far, however, suggests that in this instance Deleuze and Guattari arguments regarding the war machine may be misleading for, as we have seen, the war machine does not populate a milieu exterior to the State; rather, the war machine emerges out of the State to populate the milieu of exteriority as the prelude to the mapping of the exterior as the interior. Deleuze and Guattari of course suggest that what does emerge out of the State is not the war machine but the institution of war, that is to say the military.⁷⁴

Deleuze and Guattari suggest that the Nomad is the originary expression of war – that which comes from elsewhere. But this is Deleuze and Guattari being disingenuous because the co-relation between the Nomad and the State stems from the Otherness of the Nomad vis-à-vis the State. In other words, the Nomad is the signature of that what is always-already in Resistance to the State. But it is curious, is it not, that while the Nomad is the Other of the State by virtue of its being the Outsider to the State, it actually achieves its status as the Outsider in relation to the State. In this way, the State (1) can appropriate the Nomad because, among other things, it knows its Other, (2) it (the State) recognizes the latent power of the Nomad (that is, the force behind the power of resistance), which it seeks to incorporate within itself by means of the war machine, and (3) as a consequence, that what the State appropriates is not the war that comes from elsewhere, but a war which, we should be careful to note, now in a revised form, comes from the relation that the State shares with its Other, the Nomad. In this way, the Nomad–State relation which provides much of the justificatory arguments that Deleuze and Guattari use to place the war machine, indeed war, in a milieu of exteriority vis-à-vis the State fails to exhibit the non-relation between war and “the political” that we originally referred to at the outset of the study as that “of the uncircumscribed to the field of its potential circumscription.”⁷⁵ Thus, while not wholly dismissing Deleuze and Guattari’s thesis on the Nomad, we retain a degree of skepticism about the co-relation that they draw between the Nomad and the war that comes from elsewhere.

Let us now briefly look at particularly that contradiction that we find at play in Deleuze and Guattari’s exegesis on war machines and war. Deleuze and Guattari claimed that war machines, like war, “comes from elsewhere” – that is to say, from outside the State-apparatus. But, as we have seen, this is not the case. Even if we think in terms of the free flow of forces, the loose consistency of assemblages and progressively calcifying apparatuses (and the corresponding networks that they individually and collectively give rise to), we find that Deleuze and Guattari,

though claiming an absolute exteriority on behalf of war machines and war, draw the motive forces animating war machines and war from an originary locus within networks of forces that are being progressively arranged and re-arranged densely. The implications, as we have seen in the context of our discussion earlier, are immense. Thus, for example, we saw how, when Deleuze and Guattari suggest that the Nomad is the originary expression of war (“that which comes from elsewhere”), this expression of war, despite its apparent exteriority, remains ensconced with/in an interiority – in the State – for it is only in the context of the State (apparatus) that the infinite speed and movement of nomadism is discernable. Additionally, we have no clarity on the matter regarding whether nomadism recognizes or even finds relevant the State-apparatus at all, and if it does, how does this recognition take place and what is the relevancy that is established between the Nomad and the State apparatus. Note that this does not contradict the infinite speed and movement that Deleuze and Guattari refer to in the context of the plane of immanence or, for that matter, of the nomad. But we should certainly make note of the point that nomadism is the condition of the plane of immanence. Thus, to say that the speed and movement of the Nomad is discernable in the context of the State apparatus (specifically in Deleuze and Guattari’s allusion to war) is to restrict and circumscribe the infinite speed and movement of the Nomad and, by extension, of the planes of immanence by the *stasis* that the State apparatus exhibits. It will be recalled that we had discussed planes of immanence in two senses – as particular planes of immanence and The plane of immanence. Thus, unless the assertion is made that The plane of immanence somehow – even if only under particular and specific conditions/circumstances – loses its immanence in the context of apparatus-like structures, it is difficult to understand precisely how the Nomad’s speed and movement can be reduced to the State apparatus.

Recall also that even before we reached this point, we had already asked a critical question of Deleuze and Guattari. We had asked whether the war machine (which we know, going by what Deleuze and Guattari tell us, is an assemblage) is of a different order than the State apparatus. We asked this because – again going by what Deleuze and Guattari have described – we have seen how apparatuses emerge as assemblages calcify. It is not important at this stage to reflect on why and how assemblages calcify. What is being suggested is that apparatuses necessarily emerge from assemblages, and that while there may be an unlimited number of assemblages and resulting apparatuses, the sequence of emergence is always led by the emergence of assemblages. Further, apparatuses have their own expression and this expression is necessarily violent for, as we have seen, it is only by the expression of violence that (State) apparatuses can expand imperially, that is to say, they can organize smooth space by striating it. Thus, unless Deleuze and Guattari are referring to at least two kinds of war (which they are certainly not), the war, which according to them comes from elsewhere, actually comes from the (State) apparatus. The consequence of this for Deleuze and Guattari, of course, is that they are unable to talk about war, or more precisely, of the war which comes from elsewhere.

Five propositions concerning concept-war: A speculative exercise

We should not overlook how, by abandoning the grammar of the Real that underwrites the classic Clausewitzian martial paradigm with which we are so familiar, Deleuze and Guattari lead us – via the “ruin of representation” – to a multiverse where/in the possibility of thinking war differently and thinking differently significantly present an instance of becoming-different. Thus,

1. The *intensiveness* of war is a condition that carries “with it the events or singularities that are merely actualized in subjects and objects.”⁷⁶ It is, as the *Bhagavad-Gita* puts it, always becoming.⁷⁷ Further, “this [the *intensiveness* of war] is never born, nor does it die. It is not that, not having been, It again comes into being . . . It is not that having been, It again ceases to be. [It] is unborn, eternal, changeless, ever-Itself.”⁷⁸ Given this, events and singularities – such as NCW and other theories of war and combat, the State, *anthropos* and *Thanatos* – can be said to be in-formed by the *intensiveness* of war – infinitely and indefinitely – without beginning, middle, or end. As we have seen, the theories and doctrines of NCW, marked by their spillage over and across the physical, cognitive and informational domains veer close to this. Yet, as we have also seen, despite the distinct possibility of the NCW theories to account for a full spectrum battlespace, this accounting is always-already limited for it presumes a closed system or, in Deleuze and Guattari’s terms, the complete striation of smooth space.
2. The *intensiveness* of war is an indistinguishable intensity of forces operating across infinite magnitudes. Thus, war is infinite movement at infinite speed, which leaves traces in the transitory forms of crests and troughs. These mark the ebb and flow of intensities of force. It is important for us not to (mis)understand “trough” to mean or indicate a reduction of any sort. It is not a subtraction or a division of any kind. Additionally, “trough” (in this specific context) is not the opposite of “crest.” The invigorating force that crests and troughs is akin to a “flux,” which is recognized by its intensity and, which is disruptive, destructive, and deconstructive and, in this sense, is creative. As such, the *intensiveness* of war can only be traced rhizomatically as a “differential geometry” of becoming-X. The *intensiveness* of war, thus outlined, and when compared to the descriptions and accounts of war that we find articulated, suggested, and affirmed by the theories of war (past, present, and emerging), to use Hallward’s phrase, is simply “out of this world.”
3. The *intensiveness* of war is the fluctuation (movements) of the immanent relations in and of force. As such, the *intensiveness* of war has magnitudinal and qualitative properties, that is to say, intensities. Intensities are particular confluences of forces. In this sense, intensities are always instants – events as signatures in Time. Thus, it is more appropriate to refer to intensities as *instant-intensities*. Instant-intensities are dynamic and always in flux. They are expressions of force and, as such, are always-already becoming. Instant-intensities carry with/in them the potential of attaining and exhibiting

a stable equilibrium. This is a signature of an impending condition of entropy, but only under the specific condition which involves the extraction (alternatively, freezing or densification) of the intensity of the constituting forces of instant-intensities. As such, therefore, they are *potentially* co-constituents of “fields of correspondence.”⁷⁹ While we will examine these fields of correspondence in more detail, for the moment, it suffices for us to note that fields of correspondence allow us to draw vectors which connect a diverse set of instant-intensities which, particularly under NCW conditions, can quickly become total conditions of possibility.

4. The *intensiveness* of war is always in *excendence*. Borrowing the term from Levinas, it means simply: an a-rising without departure.⁸⁰ In this sense, *excendence* is the becoming-intensive process of instant-intensities and, as such, it is an expression of force in terms of movement. This becoming-intensive process is both the aggregation of intensity and its dispersal. In other words, *excendence* is a movement of forces and, as such, the outcomes of *excendence* are the crests and troughs that we referred to earlier.
5. The *intensiveness* of war creates assemblages. Assemblages are differential expressions of formations and de-formations made manifest by the process of excendence. Assemblages are creative in the sense that not only do they directly, at infinite speed, express a specific event – a singularity – they also inform non-local events at infinite speed and at indefinite locales. Thus, assemblages carry non-actualized events and occurrences as Becoming-X: locally and non-locally. Assemblages issuing forth from war are volatile because they are transient aggregations of instant-intensities. Aggregation, in this context, is a function (and an expression) of instant-intensities. Instant-intensities, at some point, appear to reach a point/state/condition/phase where they are stable. But we should be careful to qualify this assertion. This stability should not be construed as being a “stable state or condition”; rather, this state or condition is an indicator of the proximal location of the instant-intensity to a state or condition of entropy. When at this location instant-intensities acquire density. This, however, must be further qualified. The increasingly densifying condition of the instant-intensity is always-already in a state of withdrawal from this proximal location because, as mentioned above, of the processes of *excendence*, which are continually at work with/in instant-intensities. Assemblages are, thus, the aggregations of instant-intensities when the latter are in this proximal condition to entropy, which is also why assemblages cannot persist, rather they are always forming and de-forming. When instant-intensities aggregate as assemblages, a densification of intensity takes place. Thus, the movement that characterizes intensities slows down (however imperceptibly). It is at this stage that instant-intensities are prone to being frozen or enframened. Enframing, thus, is the slowing down of the infinite speed and movement of instant-intensities. Assemblages therefore, may be considered as becoming-enframings, but which, given their open-endedness, that is to say, their transience, never become enframings. However, a collection of enframings in close proximity to each other are able to channel the instant-intensities into an infinite loop,

thereby consigning them to achieve stable states or phases. As a consequence, correspondences are established between such enframings, which are dependent on the closed circuit via which instant-intensities are forced to flow. Note that instant-intensities, when ensconced within such closed circuits, lose their instant nature. Thus, intensities atrophy, that is to say, they deteriorate or, more accurately, they become inert. This, in turn, enables the establishment of fields of correspondences, which also allow for truth values to be assigned and established.

Concept-war: A minoritarian tactic

Mullarkey tells us that

Deleuze's concept of the virtual and the actual [which are as critical to his philosophical *oeuvre* as are the concepts of "becoming" and "difference"] is [an] example of a decisional thought with its own *mixte* – different/citation, which (dis)joins the virtual and actual.⁸¹

Indeed, with specific reference to Deleuze and Guattari's writings on the plane of immanence, Laruelle insists that

[t]he plane itself is, syntactically and reflectively, what qualifies pure immanence such that it becomes "the property of the plane, of a universal, etc. . . ." Deleuze's continual invention of anti-dualistic terms . . . [does] not conceal the arbitrary decision to denounce transcendence as theological.⁸²

Thus, as Mullarkey puts it, "[t]he plane of immanence, in its very syntax of being 'to' something (even 'to itself'), gives it away as an 'axis of transcendence'."⁸³ Be that as it may, in the context of this study, what we have observed is that even when cast against a sophisticated backdrop involving rhizomes, immanence, assemblages, and apparatuses underwritten by (a)periodic difference and repetition, Deleuze and Guattari's discussion on war machines and war seems fractured and disjointed and, as a net assessment, frankly contradictory.

But, in the wider context of Deleuze and Guattari's philosophical project, the fundamental problem – if we follow Mullarkey's exegesis on Laruelle's work – is not necessarily in the arguments that Deleuze and Guattari offer; rather, it is in the syntax that Deleuze and Guattari use to describe what ultimately is their project of immanence for it, inadvertently, involves a decisionism that forces immanence into transcendent forms. Thus, according to Mullarkey, "Deleuze fools himself into thinking that empiricism goes beyond transcendence when in fact it is simply another form of it, perhaps the most dangerous form because of its self-misunderstanding."⁸⁴ Indeed, there is another issue that is at play here. As Mullarkey advises us:

Deleuze posits his plane of immanence as a virtual *reality* positioned below another world, that of the actual molar realities. It is the actual that is

subordinate to the virtual. Despite thinking of immanence in its purest form possible . . . he still proposes a two-world ontology when explaining these ideas.⁸⁵

It is therefore not surprising that our engagement with Deleuze and Guattari in the context of war and war machines reveals a number of layers which are not strata, but which are arranged hierarchically across the Real, the Actual, and the Virtual. These we identified as chaos, planes of immanence, rhizomes, assemblages, and apparatuses/structures. Additionally, we found that these layers are also ordered – particularly in terms of their density, which is nothing but a signature of movement and its increasingly diminishing presence as we move from the state or condition of the undifferentiated movement at infinite speed of chaos into the structured (limited) motion endemic to the suspended animation of the stage that the theories and doctrines of NCW claim as their (ideal) operative ecology.

While none of the aforementioned materially detracts from the Deleuze–Guattarian project, the point of concern for us is that by strictly following a metaphysical approach to the problem of immanence, which Laruelle suggests is implicit in Deleuze’s philosophical project, we need to seriously re-consider if and how a philosophy of immanence, particularly one that can be deployed to highlight the *intensiveness* of war, can work at all? From the perspective of this study, this question is of critical importance because, though we have profited by reading the NCW theories in the Deleuze–Guattarian context, as we have seen, their philosophy of immanence nevertheless falters when it considers the question of war-as-such. Naturally, we would be moved to ask: how then is it possible to not simply talk about immanence, but also to highlight the *intensiveness* of war?

What we need is an unproblematic start-point, which Laruelle identifies as the vision-in-one, which is described as “the ‘being-given which is without-giveness’ – a givenness *without* a ‘background’ of givenness (in case any theological interpretation is suspected).”⁸⁶ Thus, as Mullarkey tells us, Laruelle’s starting point is the Real, which is a thought without any conditions at all.⁸⁷ As a consequence, Laruelle achieves “escape velocity” in this regard by suggesting the non-philosophical as being absolutely self-sufficient. For our purposes this is eminently suitable because to respond to the question regarding the *intensiveness* of war – as posed earlier – with any form of crypto-transcendental logic would only serve to detract us from our quest and to morph our efforts into a schematic of transcendence.

It is at this stage that the *Bhagavad-Gita* – a patently non-philosophical (in the sense that Laruelle means it)⁸⁸ text – is useful. As alluded to earlier, in it, on the eve of the Battle of Kurukshetra, Krishna and Arjuna discuss precisely such a vision-in-One:

With numerous mouths and eyes, with numerous wonderous sights, with numerous celestial ornaments, with numerous celestial weapons uplifted;

Wearing celestial garlands and apparel, anointed with celestial-scented unguents, the All-wonderful Resplendent, Boundless, and All-formed.

There . . . the son of Pandu [,] then saw the whole universe resting in one, with its manifold divisions.⁸⁹

When considered in the context of not simply the philosophies that have underwritten the theories of war and combat since the classical age, but also in the context of Deleuze and Guattari's sophisticated account of immanence, this vision-in-One is "heretical, Gnostic knowledge, a science in the pure sense, an experience of the Real. And though one might regard this Real as an abstraction, we cannot [be] accuse[d] of not accounting for this abstraction" for we, following Laruelle, unambiguously claim to abstract the Real or the One.⁹⁰ The One is an abstract-without-an-operation-of-abstraction.⁹¹ Now, if it is asked, "why is the experience of the Real an experience of the One . . . why is it a vision-in-One?" This is because, as Mullarkey suggests, " . . . of Immanence. The One is highly non-relational . . . The One is indifferent to all. It is not immanent *to* anything, but immanent *in* itself. Hence, the experience or vision-in-One cannot be intentional or representational in any way."⁹² This then is the vision-in-One with which we will begin to describe a radically different imagination of war.

The *Bhagavad-Gita*, which forms a part of the massive Indian Epic, the *Mahabharata*, is considered one of the core spiritual texts of *Sanatana Dharma* (or, what is more commonly known as Hinduism). Yet, the *Bhagavad-Gita* is not simply a spiritual or religious text. In fact, as some have pointed out, it is a condensation of the *Upanishadic* philosophies that followed the four *Vedas*. For our purposes, while the philosophy of the *Bhagavad-Gita* is important and will be pertinent but, crucially, given the conditions in which the *Bhagavad-Gita* was set – which was on the eve of the Battle of Kurukshetra – it may also be considered as a classic example that accounts for an event involving the decomposition of strategic ensembles and, in this sense, may be understood as being an exegesis on the in-folding and in-forming of the *intensiveness* of war in its more commonly perceived Clausewitzian forms.

Normatively, the *Bhagavad-Gita* (literally translated as the "Song of the Lord"), is an account of an intense dialogue that took place between Arjuna, a Pandava Prince – one of the principle combatants of the Battle of Kurukshetra (the central event around which the epic of the *Mahabharata* is woven) – and his unarmed friend, confidant, and charioteer, Krishna. The conditions under which this dialogue is said to have taken place are these: just prior to the onset of hostilities, Arjuna, operating in what we now would consider as being a classic Clausewitzian mode, expresses his hesitancy to engage in what promises to be (in so far as he thinks is) a war of annihilation in which success is determined in terms of total victory or absolute defeat.⁹³ It is at this point that Krishna labors to explain to Arjuna the originary condition that he is already-always embedded in and which in-forms the Battle of Kurukshetra.

As Krishna describes it, the Battle of Kurukshetra – for Arjuna – is one that takes place at a number of levels – the most obvious one being the fearful and annihilistic physical battle that forms the backdrop of the *Bhagavad-Gita*. But when considered against the wider canvas of the *Mahabharata*, and as we are introduced to

Krishna's *Vishvarupa*, or Universal Form, we are able to discern the short-sightedness of the strategic imperatives that seemingly brought about the physical Battle of Kurukshetra. Only then is it possible to appreciate the significance of Dhritrashtra's apparently guilt-ridden desires; the Kaurava clan's strategic political object; the subtle and intricate cross-registral power-play between Arjuna and Karna; the complex battle of wits between Yudhishtira and Shakuni; the intensely physical duel between Bhima and Dushshyasana; the socio-ethical implications and consequences of the public insulting of Draupadi; and the numerous other incidents which are considered as being contributory constituents of the ultimate conflagration that took place on the field of Kurukshetra as nothing more than reiterations and expressions of the Universal Form as merely instants and events in "the whole universe centered in one— including the moving and the unmoving."⁹⁴

What invites our attention to Krishna's and Arjuna's seemingly out-of-place discussion walled in by the two opposing armies is that, in addition to it being the first and most vivid reference to the Universal Form, it is also a discussion that centers around what it means to be operable in and as the flux that characterizes the Universal Form. This flux— vividly described as being "boundless . . . in every side with manifold arms, stomachs, mouths, and eyes . . ." of which "neither the end nor the middle, nor also the beginning"⁹⁵ can be seen— is another battlespace wherein the collapse of Arjuna and his resurgence— guided by Krishna— as an enlightened warrior enables him to not simply do battle at the physical level, but to also (re)establish an immersive relationship with and in what we have thus far referred to as the *intensiveness* of war. For the more strategically-minded Arjuna, this condition is simply incomprehensible. His *telos*-ridden/driven world hinders his appreciation of, and engagement with, the infinite speed and movement that, with mysterious subtlety, decomposes the strategic ensembles that he is most familiar and comfortable with. Thus, when his best-laid plans— despite the best of his intentions— do not "survive contact," he is baffled. The best that he can do is to "sense and respond"— but only from a location within the world of strategic ensembles that he is ensconced in. This is the point at which Arjuna falters on the field of battle and where Krishna steps in to introduce him to the *intensiveness* that informs the impending Battle of Kurukshetra.

When, on the eve of the Battle of Kurukshetra, Arjuna threw down his weapons and fell into despair at not only the sight of the large and well-equipped Kaurava Army, but more so at beholding the distinguished array of Kaurava commanders who ranged from Bhishma, his grandfather, to Dronacharya, his teacher/guru, to his relatives and friends, Krishna's discussion of the *intensiveness* of war may have certainly seemed incongruous and, from Arjuna's perspective, rather less-than-helpful. And, what were the principal reasons for Arjuna's despair? As a military commander, and a warrior, of the first order (after all, Krishna himself refers to Arjuna as "the scorcher of enemies"), undoubtedly, victory and defeat would have been of concern to him. But Arjuna was also afflicted by a moral resignation that resulted from his knowing that by engaging in battle, he would be stained with the blood of countless individuals including of those near and dear to him. Krishna's rejoinder to him is sharp and immediate: "He who takes the self to be the slayer, and

he who takes It to be the slain neither of these he knows. It does not slay, nor is it slain.”⁹⁶ Thus, Krishna insisted on discussing this “out of the world” concept of war, by saying, “[k]nowing this one attains the highest intelligence and will have accomplished all one’s duties, O descendent of Bharata.”⁹⁷ Note how, in one stroke, among other things, Krishna moves the discussion that began with Arjuna’s primarily anthropocentric concerns onto a non-human level.

Now, despite the long and detailed discussion between Krishna and Arjuna, the latter remained in doubt. It could be said that Arjuna was unable to envision the vision-in-One that Krishna was attempting to describe. It is at this point that Krishna shares with Arjuna the vision-in-One, or that what in the *Bhagavad-Gita* is referred to as the Vishwarupa by saying: “See now, O Gudakesa, in this My body, the whole universe centered in one— including the moving and the unmoving – and all else that thou desirest to see.”⁹⁸ And, Arjuna saw the following: “boundless form on every side with manifold arms, stomachs, mouths, and eyes; neither the end nor the middle, nor also the beginning.”⁹⁹ Krishna then reaffirms this vision-in-One by stating: “At the approach of (Brahma’s) day, all manifestations proceed from the unmanifested state; at the approach of night, they merge verily into that alone, which is called the unmanifested.”¹⁰⁰ This he follows up by reiterating: “I am the mighty world-destroying Time, here made manifest for the purpose of infolding the world.”¹⁰¹

Arjuna can, thus, be said to be caught up in such a closed loop and thus may also be said to be situated within a number of fields of correspondence by virtue of being a prince, an heir to a State, a husband, a father, a sibling, a student, a warrior, a comrade, etc. It is therefore not surprising that he would ask of Krishna,

Of what avail is dominion to us, of what avail are pleasures and even life, if these, O Govinda! for whose sake it is desired that empire, enjoyment, and pleasure should be ours, themselves stand here in battle, having renounced life and wealth – teachers, uncles, sons, and also grandfathers, maternal uncles, fathers-in-law, grandsons, brothers-in-law, besides other kinsmen.¹⁰²

Thus, he concluded, “Even though these were to kill me, O slayer of Madhu, I could not wish to kill them – not even for the sake of dominion over the three worlds, how much less for the sake of the earth!”¹⁰³ Further, in a state of dejection, Arjuna said, “[V]erily, if the sons of Dhrtarastra, weapons in hand, were to slay me, unresisting and unarmed in battle, that would be better for me.”¹⁰⁴

Arjuna, caught in the fields of correspondence, could only assess the situation from the perspective of the truth-values that the fields of correspondence establish. Thus, to him, the need to fight his kin for dominion over earth seemed pointless, indeed, disastrous for, as Arjuna put it, “[w]hat pleasure indeed could be ours, O Janardhana, from killing these sons of Dhrtarastra? Sin only could take hold of us by the slaying of these felons.”¹⁰⁵ It is interesting to note that Krishna does not contradict or contest the Real that Arjuna was appealing to. Indeed, he agrees with him by saying, “[t]hou hast been mourning for them who should not be mourned for. Yet thou speakest words of wisdom.”¹⁰⁶ Nevertheless, Krishna also insisted on

drawing Arjuna's attention to think alongside the Real (quite like how, as we have seen, Laruelle insisted on). Thus, Krishna said, "[i]t is not that I have never existed, nor thou nor these kings. Nor is it that we shall cease to exist in the future."¹⁰⁷ And, as if to reiterate the point, Krishna also suggested: "[n]otions of heat and cold, of pain and pleasure are born . . . only of the contact of the sense with their objects. They have a beginning and an end. They are impermanent in their nature. Bear them patiently, O descendent of Bharata."¹⁰⁸ Arjuna, of course, misses the point that Krishna makes, which is that of the unmanifested – manifested – unmanifested movement that can be said to include the Real (of the fields of correspondences) but which is, crucially, not limited to this Real. Thus, what Krishna urges Arjuna to do is to abandon the limited battlespace projected by and within the fields of correspondence that he resides within and to engage with the intensiveness of war characterized by the movement from the unmanifested to the manifested to the unmanifested.

Conclusion

As we have seen, the NCW theories and doctrines – if we borrow Secretary Rumsfeld's turn of phrase – are only concerned with making known the unknowns. Put in another way, it could be said that the NCW theories and doctrines are concerned with the manifestation of the unmanifested and, more importantly, to maintain the manifested as the manifested by exhausting and consigning the manifested into a locale and condition of standing-reserve. In this way, the propensity of the NCW theories and doctrines is to establish fields of correspondence (which, it will be observed, are critically dependent on an ethic of representation) and to erect – by means of meshes of networks – closed systems, which are, as Deleuze and Guattari advised us in the context of apparatuses, violent, expansive, and imperial. It is also interesting to note that the default operational posture of such a martial bearing is to be pre-emptive. It is for this reason that Deleuze and Guattari advised us that apparatuses (State-apparatuses) reach into the milieu of exteriority to capture war and make it its own.

As seen previously, the only way by which the theories and doctrines of NCW can establish fields of correspondences is by extracting the intensity of force or, alternatively, by exhausting the intensity of instant-intensities, thereby consigning that what remains to stand-reserve. In other words, there is an underlying assumption that it is possible to irrevocably and, in perpetuity, exhaust the intensities of forces. From the point of view of the theories and doctrines of NCW, this assumption can only be actualized if, and only if, there is an exact overlap between fields of correspondences and anomalous forces. If such an overlap can be realized, then it must be accepted that it is indeed possible to reduce the multiplicity of these anomalous forces to a discrete and finite singularity (while accommodating and accounting for diversity in this singularity). Yet, there is a problem in positing this, and it is this which irrevocably fractures the NCW's concept of operations.

Previously, it was asserted that *intensity* is the fluctuation (movements) of the immanent relations in and of force. These fluctuations may also be understood as

the *intensive* differences of forces with/in instant-intensities. Thus, when it is said that instant-intensities are always-already in *excedence*, it also is suggested that the force of *excedence* is that of difference. It is important to reiterate that this difference is not simply the extrinsic difference that is discernable when forces come in contact with each other. Rather, in the first instance, this difference is *intensive*, occurring within instant-intensities which, after all, are becoming-particular configurations of force-flows. In other words, instant-intensities while being generative, are simultaneously de-generative, that is to say, re-generative for they are constantly becoming-X. The process that drives this becoming is, of course, *excedence*, the force of which is difference.

As we have also seen, it was stated that when instant-intensities are exhausted of their intensity, the remainder is susceptible to being enframed, which leads to the establishment of fields of correspondence. But this presupposes that while the extraction or exhaustion of intensity is taking place, there is no play of forces that either adds to, or subtracts from, or re-arranges the distribution of forces in an instant-intensity. In other words, while an instant-intensity is in the process of being made to stand-reserve, the instant-intensity (with its steadily diminishing intensity) is considered immobile. But this, as we have seen, is not wholly accurate because the motive force of instant-intensities is *intensive* difference, which is always-already at play with/in instant-intensities. In this sense, therefore, instant-intensities cannot be constituents of fields of correspondences which, we should not forget, were stated to be instances of intensities that are standing-reserve. Thus, the NCW project's ambition of (1) exhausting instant-intensities and thus, (2) potentially overlapping the infinite play of intensive and anomalous forces with meshes and nets of calculability (which serve to reduce instant-intensities to mere instances) thereby enabling the establishment of fields of correspondences is ill-fated. This is because, the very process of enframing (or, as Heidegger would put it, *gestelling*) is subverted by the intensive differences implicit in instant-intensities. Note that this subversion is also the reason why, as mentioned earlier, assemblages cannot persist; rather, they are always forming and de-forming. Thus, as the NCW *concept* of operations strives to create a total and comprehensive battlespace—the ideal condition of war—its very raw materials (instant-intensities) — serve to subvert it, thereby collapsing the edifice that the theories and doctrines of NCW attempt to erect. It is precisely this that serves to de-construct not only the classical theories of war, but also the Clausewitzian theory of war and, as mentioned earlier, the theories and doctrines of NCW. And, it is precisely against this subversion that Clausewitz devised his defensive maneuver of the architectonic and the NCW theories and doctrines deploy their meshes and nets of calculability.

Given this, let us return momentarily to the war that Deleuze and Guattari advised us comes from elsewhere in relation to the State apparatus. The State apparatus, in the context of the vision-in-One as outlined earlier, is analogous to a field of correspondence. Now, when Deleuze and Guattari tell us that war comes from a milieu of exteriority, they are implicitly suggesting that the State apparatus has definite boundaries beyond which this “other” war resides. Further, Deleuze and

Guattari advise us that this exteriority is invaded by the State apparatus by appropriating the war machine, which they tell us is an assemblage. Two issues stand out when we correlate this formulation of Deleuze and Guattari's to the intensiveness of war that we have articulated earlier. First, assemblages in the context of the *intensiveness* of war are always unstable. This is because, as we have seen, they are constantly forming and de-forming in keeping with the processes of *excedence* that are continually operational with/in such assemblages. Thus, to suggest that assemblages are open to capture and a focused redeployment would be to underestimate the nomadism that marks assemblages and the instant-intensities that constitute them. Thus, it is suggested that assemblages continually elude capture. Second, and more damagingly, unlike the calcified apparatuses that Deleuze and Guattari refer to, the fields of correspondences are also inherently unstable – though they may present us with the illusion that they are potentially stable and thus capturable. Additionally, as we have seen, even before fields of correspondences can be stabilized, there is a profoundly subversive tacticity that is at play with/in them. This is the function of the intensive differences that lend instant-intensities their intensity. Thus, while instant-intensities may seem to be aggregating into fields of correspondences, their disaggregating movement simultaneously serves to de-construct such fields. Now, it is posited that the *intensiveness* of war is characterized by the differential play of infinite intensities of infinite magnitude. Thus, unlike in the case of Deleuze and Guattari's war and war machines, which they claim come from elsewhere, the *intensiveness* of war is always-already inside/outside. In other words, it is not the case that the *intensiveness* of war may be reached into and appropriated like how Deleuze and Guattari advise is the case with the war that comes from elsewhere. Rather, the intensiveness of war, being in the manner described earlier, immanent in itself, is also immanent to and in any and all formations of instant-intensities, including assemblages and fields of correspondences.

It is perhaps obvious that a *concept* of war constructed in the manner as mentioned above operates across a number of registers which, while accounting for the common-parlance understanding of the conflict between nation-states, also is immanent *in* them. It is this *intensiveness* of war that this study argues lurks with/in the more traditional theorizations of war, and includes, indeed is made more discernable, by the emerging theories and doctrines of NCW. This, as Krishna consistently pointed out in the *Bhagavad-Gita*, is the signature of the ontological condition of war and he exhorted Arjuna to conduct himself accordingly, that is, as a warrior marked by "stillness in action" as opposed to the dull inertia of non-activity of the *tamasic* (inert) individual or even the frenetic activeness of the *rajasic* (passionate) individual.¹⁰⁹ According to Krishna, the essence of action necessitated by the *intensiveness* of war is associated with a constancy which, while optimally remaining impervious to the vagaries of superficial sensory impulses generated by illusory fields of correspondences, is nevertheless creatively informed (overtly or otherwise) by the direct and rhizomatic experience that the intensiveness of war entails thereby necessitating the need to harmonize with the flux of anomalous forces of the universe.¹¹⁰ In other words, the martial bearing that the *intensiveness*

of war evokes necessitates engaging with events and occurrences by “unfolding” *with* and, more importantly, *as* them, thus appearing to act with lightening speed and with full intensity. Thus, when considered in the context of such conditions, strategic ensembles like the State or even Deleuze and Guattari’s war machines fragment into tactical initiatives or what we have thus far referred to as instant-intensities.

Conclusion

Our review of what Gat refers to as “modern military theory” shows us that, from approximately the seventeenth century, a specific *concept* of war played a critical, if understated, role in its evolution. This *concept* of war emerged as a consequence of the revolution that Descartes brought about, which was “not just linear, fundamental, and irreversible change, and not just auto-emancipation from the intellectual and cultural shackles of the past, but also . . . something that change[d] everything.”¹ The Cartesian philosophical project, which marked a massive intellectual break from the Age of Religion, theorized a revolutionary concept of the rational thinking Self which, in turn, formed the kernel around which the operative concept of war took shape. This was reflected in its most extreme form in the works of the military theorists of the Age of Enlightenment such as those of Puysegur, de Saxe, Maizeroy, Guibert, von Bulow, Lloyd, and others. At this stage of the evolution of military thought, the emphasis – buoyed by the rapid advances that were being made in the natural sciences by Gassindi and Newton, among others – was to develop a “scientific” theory of war, which would allow for the most efficient use of force on the battlefield.

A simultaneous effort was also underway in the works of some of the influential jurists and political theorists of the time such as Grotius, Vattel, and Hobbes who, also influenced by the Reason-centric philosophies originating from the Cartesian system, developed theories and models that strove to bring war to Reason. Yet, as the experience of war showed, this exuberant faith in the application of Reason in the theorization of war and its conduct was continually undermined by the ill-effects of chance and uncertainty. It is only with the appearance of Jomini’s “science” of the “art of war” that a degree of temperance in the radical application of Reason was achieved. This growing temperance found its fullest expression in the Clausewitzian theory of war. This not only provided a means by which the problems associated by chance and uncertainty could be addressed, it also provided a theoretical framework within which a Reason-able *concept* of war found its fullest expression.

In the sphere of dogmatic rationalism, the theory of knowledge was based on the notion of “correspondence” – between the subject and the object – which empowered the Cartesian Self (and concomitantly, the Enemy) in the first instance. In this sense, the aim of dogmatic rationalism, which took Descartes’ philosophical

system as its point of origin, was to reach an accord between the “order of ideas” and the “order of things.” In contrast to this, Kant’s metaphysical project was “to sketch the architectonic of all cognition issuing from *pure reason* . . . [and his starting point was] . . . from . . . the general root of . . . cognitive power [which] divides and thrusts forth two stems, one of which is *reason* . . . [by which Kant meant] . . . the whole higher cognitive power.² Thus, Deleuze, in his reading of Kant notes that “[he] defines philosophy as ‘the science of the relation of all knowledge to the essential ends of human reason’,” or as “the love which the reasonable being has for the supreme ends of human reason.”³

Clausewitz, of course, was working within the context of Kant’s Copernican Revolution in “western” philosophy and thus would have been no stranger to these and related philosophical concepts. As a soldier-intellectual, he was philosophically astute (a virtue that was enhanced by his first-hand experience of war) to recognize that war, essentially, was a phenomenon that existed on the very edge of what Kant referred to as “human reason.” Clausewitz was also quick to recognize—due to, among other things, his acute and perceptive reading of the history of war and combat since the days of antiquity—that war carried within itself the potential to slip out of the grasp of Reason. Addressing this was Clausewitz’s strategic objective, which he attempted to achieve by girding war with “the political” (thus making war subject to the State), and by entrusting the Genius (backed by careful acts of planning and organization—both on and off the battlefield) to address what he referred to as the fog and friction of and in war.

Our engagement with Clausewitz’s theory of war reveals that the architectonic that he developed was, as a net assessment, designed as a defensive gesture against the possibility of war escaping Reason and taking on a life of its own—particularly in the form of Absolute War. Thus, Clausewitz repeatedly cautioned his readers that while Absolute War was more the exception than the rule, it would be foolhardy to not consider it as the base reference when theorizing war. Given this, when considered philosophically, Clausewitz’s theoretical project was a grand affair for it aimed at nothing less than not only being the last word on the conduct of war, but also positing an architectonic of war which has, since his time, served to ensnare our imagination of war. Thus, today when we speak about war, we do so in Clausewitzian terms.

With the advent of what, in our times, is popularly referred to as the Age of Information, characterized by an increasingly ubiquitous proliferation of advanced ICTs (which are being increasingly deployed to address what the QDR 2006 refers to as a shift from “nation-state threats to decentralized network threats”), while there have been calls to re-evaluate the Clausewitzian paradigm of war and, along with it, the *concept* of war that underwrites it, not much has changed. As we have seen, the calls to transform the *concept* of war have been, for the most part, still-born, in addition to inviting scathing criticism from those who, following Clausewitz, assert that the principles of war are eternal and enduring. Thus, the so-called postmodern theories of war and combat—despite their apparently radical transformative potential—have retained a Clausewitzian kernel. In other words, the transformation that the theories and doctrines of NCW purport to bring forth are not

only limited to the character of war (as opposed to the nature of war), they are also underwritten by the same, or a very similar, operative *concept* of war around which Clausewitz originally constructed his architectonic. It is, therefore, not unexpected that when considered in this way, the theories and doctrines of NCW appear to us as being a logical and necessary stage on the inexorable path along which the evolution of war and its conduct is said to be taking place.

But our analysis of the Clausewitzian theory of war – particularly, the discussion and analysis relating to Absolute War – also reveals that Clausewitz was, at least tacitly, cognizant of what we referred to as the anteriority of chance and uncertainty, which is essentially indifferent to the (*thanato-*) political, that is to say, to any kind of Reason-able centering. Further, our engagement with the theories and doctrines of NCW shows that the increasing reliance on advanced ICTs and the “new sciences” to construct newer and different battlespaces involves thinking in terms of networks and meshes, flows of information, the progressive reduction of language to digital code, of effects-based operations, and of a native intelligence that is said to run through the networks that seek to enmesh the physical, cognitive and informational domains only serves to render the political context of war as being increasingly irrelevant. In this way, arguably, NCW – as a *concept* of operations – directs our attention to the apparently distributive and dissipative nature of the net-centric machine of war which, in its benign condition, remains a state-owned and controlled apparatus. But equally, it is important to recognize that the NCW project – which is being lent a consistency by an evolving set of common-standards *regimes*⁴ – as a consequence of its close affiliation to the State, also displays a countervailing “tendency to organize,” that is to say, to contingently strategize – in terms of capability and efficiency. In this latter form, NCW, in Buchanan’s words, “effectively subsumes the state, making it just one of its many moving parts.”⁵ Thus, it can be argued that NCW is nothing less than a Deleuzian war machine that has run amok and “that takes [a terrifying] peace as its object.”⁶ In this way, the “ideal” NCW project – as a global war machine – reveals its potential as a post-political phenomenon.⁷

This has a striking similarity with a fear that Clausewitz often gave expression to especially when discussing Absolute War. As we have seen, Clausewitz feared that if and when the logic of Absolute War asserted itself and, when considered in the context of the anteriority of chance and uncertainty, the political was indeed rendered irrelevant for the logic of Absolute War acknowledged no other logic than its own. However, the way in which the NCW project differs from Clausewitz’s lies in the fact that while the latter could not deny the thanatologically Reason-able implications of Absolute War, the concept of operations that underwrites the NCW project, at least theoretically, seeks to neutralize the thanatological consequences of such a scenario by creating a condition of suspended animation which, in turn, necessarily involves assuming a pre-emptive posture that actively seeks to subject Secretary Rumsfeld’s “unknown unknowns” – the anteriority of chance and uncertainty – to “calculative Reason” thereby reducing them, at the very least, to the “known unknowns.”

Thus, we posed the following questions: Do the theories and doctrines of NCW (which, more often than not, are considered to be mere instances of the digitization

of the Clausewitzian theory of war) exhaust the *concept* of war? Is the *concept* of war fated to remain forever circumscribed within Reason – considered either *thanato*-politically or in terms of calculative reason?

As a preliminary and tentative response, this study suggests that a project that has as its objective the re-imagination of war, should optimally begin by addressing the theories of war, past and present, as primarily philosophical encounters rather than as merely tactical or strategic works on war. Further, keeping in mind the Deleuze–Guattarian description of the post-political phenomenon of a “terrifying peace,” it also suggests that the progressive confluence of the Clausewitzian theories of war and information technology (as a dependency-structure) spawns a logic of war that tends to establish a condition of suspended animation – a condition of maximal security – by creating and deploying, to paraphrase Libicki’s words, “a fine enough mesh that can catch everything.” This, as we have seen, is the “ideal” martial ecology desired by the concept of NCW operations. While some may say that this is a too broad, dismal, apocalyptic, and techno-driven (mis)understanding of war and of human society, yet, some of the evidence that we have seen thus far seem to point in this direction. This, while being the more common way by which the problematization of war in the Age of Information is taking place, *in extremis*, succeeds in sapping the *concept* of war of its conceptual potency.

As a consequence, this study suggests that by taking the changes being brought in by our proliferating use of advanced information technologies seriously, and by casting the intellectual efforts of some of the key military theorists and strategists that we have considered in the course of our analysis against a broader, possibly even against a more non-philosophical framework – it is here that sources such as the *Bhagavad-Gita*, among others, are of assistance – it is possible to discover other more latent potencies in *war as a concept*. In keeping with this, this study argues that the marriage of these past and present theories of war with the digitally-driven dependency structures of the Information Age, while undoubtedly effecting a transformation in, among other things, fundamental concepts such as the Real, may not necessarily lead to the condition of suspended animation. Thus, as war and society move from an era of mechanization to one of information, as this study has attempted to show, an opportunity exists to re-cover an Other war that while accounting for the political, nevertheless remains unaccountable to it.

In this connection, it was recently asserted that:

Developments in scientific knowledge and technological prowess have been accomplished by the constitution of new types of sociotechnical assemblages and systems . . . which have not merely transformed our perception and understanding of the processes and mechanisms of the natural world . . . [they have also] . . . altered our potential to act and exist within it.⁸

This assertion by Bousquet, which is made in the context of his, in many ways, innovative account of the evolution of warfare from the mechanistic way of war to what he identifies as a “chaoplexic” way of war, presumes that “war is a particular field of human endeavour in that the nature of combat, namely the fact of two

opposing wills pitted against each other and both seeking to outwit and undermine each other.”⁹ There is a contradiction at play here within Bousquet’s assertions. If, as Bousquet says, not only are our perceptions and understandings being transformed by “new types of sociotechnical assemblages and system,” but also that “our potential to act and exist within . . . the natural world” has been altered then, what Bousquet leaves unexplained is that if our very existence (note that Bousquet here is making a statement with serious ontological implications) within the natural world has been transformed by these new sociotechnical assemblages and systems, how can the war that he refers to remain a “particular field of human endeavour?” In other words, if our very identity as humans is undergoing a transformation, then should not a redefining, indeed reconceptualization, of the Human be the first order of the day which, as a consequence, would also transform the very nature of that particular field of human endeavour that Bousquet refers to as war? Thus, we are led to suspect that the operative concept of war that informs Bousquet’s account remains not very dissimilar to that around which Clausewitz constructed his architectonic, in which case, for Bousquet, there has been no real transformation – aside from perhaps a few superficial changes – in either the processes and mechanisms of the natural world or, more importantly, in our potential to act and exist therein.

It is necessary to recognize that Bousquet’s assertions – indeed, his account of the scientific way of war – are only able to survive within a representational philosophy that privileges transcendent figures and ossifies them as icons and strategic ensembles. This is notwithstanding the fact that these strategic ensembles when they do – as they must – come in contact with the immanence of chance and uncertainty (which only humour us by being seemingly amenable to being captured and restrained by orders of reason) collapse and disintegrate. Indeed, it is the presence and operation of this transcendently-posited – but fragile – ontological privilege that leads Bousquet, but also others, to think of war in terms of exercising control over the implicit chaos of the physical battlefield. This ontological privilege manifests itself as the concept of war that underwrites not only the martial discussions of analysts like Bousquet, but which also makes its presence felt in the works of theoreticians of war of the stature of Clausewitz. This, as we have seen, can be genealogically traced to as far back as the seventeenth century.

But, this *concept* of war, which is nothing less than a strategic ensemble that binds together people, processes, organizations, and technologies, can be interdicted and disintegrated. To effect such a maneuver, however, we need to, following Deleuze, “ruin representation” by allowing for the perceiving of life-as-such as connection and relation, the outcome of which cannot be predetermined by a finite set of intrinsic properties.¹⁰ As we have seen, the Deleuze-Guattarian philosophical project, to a large extent, allows for precisely such a ruin of representation as a prelude for the disintegration of strategic ensembles into tactical fragments and initiatives. However, when applied to the question regarding war and war-machines, we find that the Deleuze-Guattarian project effects what can best be described as a strategic retreat for, while they do maintain that life is both that which opens the system, but also that which requires some form of order and system, this reversion

to an order and system when referring to life-as-such compels them, however fleetingly, to posit what Mullarkey identifies as a transcendental axis, which reinscribes a decisionism that affects their otherwise insightful commentary on war and war-machines.

In a bid to avoid a similar trap, we chose to work with Laruelle's vision-in-One, which allowed us to posit a "being-given which is without-giveness" – "a givenness *without* a background of givenness."¹¹ Such a vision-in-One we found expressed in what Deleuze and Guattari refer to as a "minor" text – the *Bhagavad-Gita*. Our appeal to this ancient Indian text was determined by our objective which was to highlight the possibility by which we could describe – by means of a number of propositions – a martial ontology, which (1) rejects the inscription of ontological privileges in the form of strategic ensembles; (2) avoids the pitfalls inherent in alternate philosophies of representation – particularly those which draw their sustenance from the classical orders of Reason; (3) engages with anomalous forces without seeking to restrain them; (4) allows for the free and unrestrained formation and dispersal of micro-local tactical initiatives; and (5) enables a purely tactical mode of operability without the positing of a transcendental locus. With the caveat that such an exercise involving the re-imagination of war is yet in its infancy, it nevertheless signals, to paraphrase Mullarkey's words,

the challenge of renewal and of acknowledging the possibility that art, technology and even matter itself, at the level of its own subject-matter, in its own actuality, might be capable of forcing new (non) philosophical thoughts onto us by implicating us in a contingent and indefinite process.¹²

Undoubtedly, it is tempting to understand this as being an exercise that may lend us newer insights into what we commonly understand as war. To succumb to this temptation would, however, be unfortunate. It would be unfortunate because not only would we *not* be calling war into question instead, we would be attempting to apply any insights that we gain which, while certainly being novel, would nevertheless be an affirmation of a pivotal anthropocentrism that brands our commonplace understanding of war. Instead, what is necessary is to jettison this anthropocentrism (or, for that matter, any kind of centering) thereby recovering, at least to some extent, the possibility of war being freed from the circumscriptions of the reasonable order of the political and of the thanatological.

There is also no mistaking the fact that for us to engage in this kind of thinking we would have to call forth a violence that is simultaneous with thinking-as-such, for our mode of operability will be, if not warlike, at least combative. But this is not a combat between fixed positions; rather, it is a fluid condition where the displacements and replacements of concepts in the form of transient tactical initiatives are but a signature of the displacements and replacements of concepts – not as an Eternal Recurrence of the Same, but that of the Different.

Notes

Introduction

- 1 US Department of Defence, *Quadrennial Defense Review Report, 2006*, Chairman's Assessment, p. A4 (of PDF version). Available at <http://www.defenselink.mil/qdr/report/Report20060203.pdf>. Last accessed on 26 January 2007.
- 2 Ibid.
- 3 Ibid. Note that this assessment in the QDR is not simply some intellectual construct. Thus, for example, W. James Woolsey, President Clinton's nominee for the CIA Directorship, in his Senate confirmation hearing, said: "Yes, we have slain a dragon . . . but now we live in a jungle filled with poisonous snakes. And in many ways, the dragon was easier to keep track of." See Neil A. Lewis, "Bigger Battle Expected on Spy Budget," *New York Times*, February 01, 1993. Furthermore, the attacks on the CIA HQ at Langley and the World Trade Center in New York City, in January and February 1993, respectively, were very quickly understood by the Counterterrorism Security Group (CSG) as not fitting "the traditional pattern of terrorist activity. The Sunni radicals behind them could not be tied to any specific country . . . the freelancers did not seem to have a political agenda. They also did not need any states to sponsor them." See Timothy Naftali, *Blind Spot: The Secret History of American Counterterrorism*, (New York: Basic Books, 2006), pp. 235, 239.
- 4 Nick Land, *The Thirst for Annihilation – George Bataille and Virulent Nihilism*, (London: Routledge, 1992), p. 150.
- 5 Ibid.
- 6 In his final essay entitled "Immanence: A Life," Deleuze wrote: "It is only when immanence is no longer immanence to anything other than itself that we can speak of a plane of immanence" (p. 27). Also, "Absolute immanence is in itself: it is not in something, to something; it does not depend on an object or belong to a subject . . . When the subject or the object falling outside the plane of immanence is taken as a universal subject or as any object to which immanence is attributed, . . . immanence is distorted, for it then finds itself enclosed in the transcendent." See Gilles Deleuze, *Pure Immanence – Essays on a Life*, Trans. Anne Boyman, Intro. John Rajchman, (New York: Zone Books, 2001), pp. 26–27.
- 7 Erik Davis, "The Witch's Flight, A Review of Deleuze and Guattari's *What Is Philosophy?*?" Available at <http://www.techgnosis.com/dg.html>. Last accessed on August 08, 2006. A version of this piece appeared in the *VLS*, Summer, 1994.
- 8 See, for example, Colin S. Gray, *Modern Strategy* (Oxford: OUP, 1999) and *Another Bloody Century: Future War*, (London: Weidenfeld & Nicholson, 2005) (who suggests that nothing like this likely to occur); Chris Coker, *The Future of War*, (Oxford: Blackwell Publishing, 2004) and Robert Leonhard, *The Principles of War for the Information Age*, (New York, NY: Presidio Press, 1998), implicitly and, at other times, explicitly question the continuing relevance of the Clausewitzian paradigm.

- 9 David Lonsdale, *The Nature of War in the Information Age*, (London: Frank Cass, 2006), p. 232.
- 10 Ibid., pp. 40–43.
- 11 Gray, *Modern Strategy*, p. 8.
- 12 See, for example, George Tanham, Kanti Bajpai, and Amitabh Mattoo (eds) *Securing India – Strategic Thought and Practice in an Emerging Power*, (New Delhi: Manohar Publishers, 1996), p. 16.
- 13 Significantly, this trend was also apparent in the works of Hans Delbruck. See, for example Hans Delbruck, *The Dawn of Modern Warfare: History of the Art of War*, Volume IV, Trans. Walter J. Renfro Jr, (Lincoln: University of Nebraska Press, 1990).
- 14 Leonhard, *The Principles of War for the Information Age*, p. 9.
- 15 John Stenbit, “Foreword,” in D. S. Alberts and R. E. Hayes, *Power to the Edge: Command and Control in the Information Age*, Information Age Transformation Series, (Washington, DC: US DoD, CCRP, 2004 (Reprint Issue), p. xiii. In this connection, while one would not normally associate Paul Virilio with NCW, his book *Pure War* is a penetrative investigation of the question of speed and war. See Paul Virilio and Sylvere Lotringer, *Pure War*, Trans. M. Polizzotti, (New York: Semiotext(e), 1997).
- 16 D. S. Alberts, J. J. Garstka, R. E. Hayes, and D. A. Signori, *Understanding Information Age Warfare*, (Washington, DC: US DoD, CCRP, 2002), p. xiii. See also Vice Admiral Cebrowski, “New Rules, New Era – Pentagon Must Embrace Information Age,” *Defense News*, October 21–27, 2002, p. 28. The admiral writes, “With the dramatic change in warfare being unleashed by the transition to the information age, *future military capabilities must be judged using new criteria . . . Yet the deeper more profound debate is about how the changing military rule sets that indicate newer sources of power and how they are brought to bear . . . A new American way of war has emerged – network-centric operations.*” Available at http://www.oft.osd.mil/library/library_files/article_27_Defense%20News%20-%20Ncw%20Rules-New%20Era%20-%202021-27%20Oct%202002.htm. Last accessed on July 28, 2004. My emphasis.
- 17 J. Arquilla and D. Ronfeldt, “The Advent of Netwar (Revisited),” in *Networks and Netwars*, (Santa Monica, CA: RAND, 2001), pp. 1–2.
- 18 J. Arquilla and D. Ronfeldt, “A New Epoch – and Spectrum – of Conflict,” in *In Athena’s Camp: Preparing for Conflict in the Information Age*, (Santa Monica: RAND, National Defence Research Institute, 1997), p. 3. Parenthesis in original.
- 19 Arthur L. Money, Asst. Sec. of Defense (C3I), US DoD, “Report on Network-Centric Warfare – Sense of Report,” Submitted to the US Congress in partial fulfillment of Sec. 934 of the Defence Authorization Act for FY 01 (Public Law 106-398), March 2001, p. 5. Available at http://www.dod.mil/nii/NCW/ncw_sense.pdf. Last accessed on July 28, 2004.
- 20 The operational stance of “full spectrum dominance” is a case in point. See, for example, Jim Garamone, “Joint Vision 2020 emphasizes Full Spectrum Dominance,” *Defence Link*, June 2000. Available at http://www.defenselink.mil/news/Jun2000/n06022000_20006025.html. Last accessed in January, 2008.
- 21 Arquilla and Ronfeldt, “The Advent of Netwar (Revisited),” in *Networks and Netwars*, p. 6.
- 22 This, in NCW terms, is understood and described in terms of Effects-based Operations (EBOs), which are defined as: “coordinated sets of actions on objectives defined in terms of human behavior in multiple dimensions and on multiple levels, and measures their successes in terms of the behavior produced.” Edward A. Smith, *Effects Based Operations – Applying Network Centric Warfare in Peace, Crisis, and War*, (Washington, DC: US DoD, CCRP, 2003), p. xv.
- 23 Petaflop speed is the point where time is measured at femtoseconds, the shortest possible events known to science. At petaflop speeds, a computer would be able to process enciphered/encrypted data with a quadrillion solutions in the proverbial “wink of an eye.” See James Bamford, *Body of Secrets – How America’s NSA and*

- Britain's GCHQ Eavesdrop on the World*, (London, UK: Arrow Books, 2002) pp. 607–608.
- 24 See, for example, the Global Information Grid Project residing within the US National Security Agency. See <http://www.nsa.gov/ia/industry/gig.cfm>
 - 25 This is the hallmark of COIN or Counter-Insurgency Operations as a “condition of war” especially in the twenty-first century. See, for example, Col. Thomas X. Hammes, USMC, *The Sling and The Stone: On War in the 21st Century*, (St. Paul, MN: Zenith Press, 2006). See also Rod Thornton, *Asymmetric Warfare: Threat and Response in the Twenty-First Century*, (Cambridge, UK: Polity Press, 2007)
 - 26 Attributed to Roger Trinquier, *Modern Warfare* (1961), quoted in Leonhard, *The Principles of War for the Information Age*, p. 1. See also D. S. Alberts, J. J. Garstka, and F. P. Stein, *Network Centric Warfare – Developing and Leveraging Information Superiority*, (Washington, DC: US DoD, CCRP, 2003), p. I; Edward A. Smith, *Effects based Operations – Applying Network Centric Warfare in Peace, Crisis, and War*, (Washington, DC: US DoD, CCRP, 2003), p. xiii.
 - 27 Mentioned in Arquilla and Ronfeldt, “The Advent of Netwar (Revisited),” in *Networks and Netwars*, 2001, p. 14.
 - 28 Money, Asst. Sec. of Defence (C3I), US DoD, “Report on Network-Centric Warfare—Sense of Report,” p. 7.
 - 29 There is a large body of literature that problematizes war in terms of when and why war originated in human society. This problematization, as Gat points out, “draws . . . information and insight from a wide range of scholarly disciplines and branches of knowledge, most notably: animal behaviour (ethology), evolutionary theory, evolutionary psychology, anthropology, archaeology, history, historical sociology, and political science.” Azar Gat, *War in Human Civilization*, (Oxford: Oxford University Press, 2006), p. ix. The present study acknowledges this eclectic spread of interests as is reflected by the number of theories of war.
 - 30 As we will see later, the State or “the political” are mere proxies of Reason.
 - 31 P. W. Singer, *Wired for War: The Robotics Revolution and Conflict in the 21st Century*, (New York: Penguin Publishers, 2009).
 - 32 Donald Rumsfeld, “Transforming the Military,” *Foreign Affairs*, 81 (3) (May/June 2002), p. 29. My emphasis. Office of Force Transformation (OFT), *Elements of Defense Transformation*, Available at http://www.oft.osd.mil/library/library_files/document_383_ElementsOfTransformation_LR.pdf. Last accessed on September 07, 2006.
 - 33 OFT, “Foreword,” *Elements of Defense Transformation*, p. 2 (of PDF file). My emphasis.
 - 34 Vice Admiral (ret.) Arthur Cebrowski “What is Transformation?,” Office of Force Transformation webpage available at http://www.oft.osd.mil/what_is_transformation.cfm. Last accessed on September 07, 2006. My emphasis.
 - 35 “‘Haptic,’ from Greek ἅπτω, meaning, ‘I fasten onto’/‘I touch.’ One could also refer to this as a ‘textural’ understanding. In the latter case, the etymology of the word ‘texture’ is instructive. ‘ . . . c.1425, network, structure,’ from M.Fr., from L. *textura* ‘web, texture, structure,’ from stem of *texere* ‘to weave,’ from PIE base **tek-* ‘to make’ (cf. *Skt. takṣati* ‘he fashions, constructs,’ *taksan* ‘carpenter’; Avestan *taša* ‘ax, hatchet,’ *thwaxš-* ‘be busy’; O.Pers. *taxš-* ‘be active’; Gk. *tekton* ‘carpenter,’ *tekhne* ‘art’; O.C.S. *tesla* ‘ax, hatchet’; Lith. *tasau* ‘to carve’; O.Ir. *tal* ‘cooper’s ax’; O.H.G. *dahs*, Ger. *Dachs* ‘badger,’ lit. ‘builder’; Hittite *taksh-* ‘to join, unite, build’). Meaning “structural character” is recorded from 1660. See <http://www.etymonline.com/index.php?term=texture>.
 - 36 Vice Admiral (Ret.) Cebrowski, “What is Transformation?,” Office of Force Transformation webpage available at http://www.oft.osd.mil/what_is_transformation.cfm. Last accessed on September 07, 2006 (My emphasis. Note that the Admiral specifically refers to information energy. Etymologically, the Admiral’s choice of the word “energy” is revealing. “1599, from M.Fr. *energie*, from L.L. *energia*, from Gk.

- energeia 'activity, operation,' from energos 'active, working,' from en- 'at' + ergon 'work'." See <http://www.etymonline.com/index.php?search=energy&searchmode=none>
- 37 For a discussion of coevolution see, Mitchell Waldrop, *Complexity: The Emerging Science at the Edge of Order and Chaos*, (New York: Simon and Schuster, 1992), pp. 259–60. A potent example of the operationalization of this is the planning for and development of robotic bugs. See "Robotic Bugs to invade battlefield," in *Times of India*, May 05, 2008. Available at http://timesofindia.indiatimes.com/HealthSci/Robotic_bugs_to_invalidate_battlefield/articleshow/3010227.cms. Last accessed on May 05, 2008. See also, "\$160 Billion Robotic Army Network Passes First Big Test. Kinda," in *Wired*, May 04, 2008. Available at http://www.wired.com/politics/security/news/2008/04/robots_army. Last accessed on March 24, 2010. An extensive analysis of robotics in war is discussed by Singer in his *Wired for War*, 2009.
 - 38 Alberts, Garstka, and Stein, *Network Centric Warfare: Developing and Leveraging Information Superiority*. My emphasis.
 - 39 Vice Admiral (Ret.) Cebrowski, "What is Transformation?" My emphasis.
 - 40 It is possible to argue, as has been done, that technological developments, such as the introduction of the stirrup, the conoidal bullet, long-range air power, maneuver warfare theory, weapons of mass destruction, spacepower, precision-guided munitions, stealth capability, modular weapons-design, realtime sensing capability, etc., have brought about radical changes, if only in retrospect to war. To a certain extent this point of view is valid though, we should note, the developments being emphasized on are more relevant to warfare, or the conduct of war.
 - 41 "War is Virtual Hell," Bruce Sterling, in *Wired Magazine*, Issue 1.01, March–April 1993. Available at http://www.wired.com/wired/archive/1.01/virthell_pr.html. Last accessed on April 02, 2004.
 - 42 Azar Gat, *A History of Military Thought – From the Enlightenment to the Cold War*, (Oxford: Oxford University Press, 2001), p. 269.
 - 43 Victor Hanson Davis, *Culture and Carnage – Landmark Battles in the Rise of Western Power*, (New York, NY: Anchor Books, 2001), pp. 21–23. My emphasis.
 - 44 *Ibid.* p. 24.
 - 45 See, for example, James Moffat, *Complexity Theory and Network-Centric Warfare*, (Washington, DC: DoD, CCRP, 2003); Tom Czerwinski, *Coping with the Bounds: Speculations on Nonlinearity in Military Affairs*, (Washington, DC: CCRP, DoD, 1998); Edward Smith, *Complexity, Networking, and Effects Based Approaches to Operations*, (Washington, DC: DoD, CCRP, 2006).
 - 46 Witold Marciszewski, "The principle of comprehension as a present-day contribution to *mathesis universalis*," *Philosophia Naturalis* 21: 523–37 (1984). pp. 525–26. See also, Stephen Gaukroger, *Descartes' System of Natural Philosophy*, (Cambridge: Cambridge University Press, 2002), p. 8. Note that Descartes specifically referred to algebra as a "universal mathesis" (universal mathematics) for it underlay both arithmetic and geometry. More fundamentally, Descartes was able to recognize a universal method that underwrote such a universal mathematics. Descartes described this method in his *Regulae*. In this study, "universal mathesis" is invoked not in the sense of a particular universal mathematics, but as the methodology by which an as complete as possible account of the natural and physical world can be given expression. See also Paul Davies, *Effects-based Operations: A Grand Challenge for the Analytical Community*, (Santa Monica, CA: RAND, 2001), MR-1477-USJFCOM/AF, p. 7 (Online version). Available at http://www.rand.org/pubs/monograph_reports/MR1477/. Last accessed on August 28, 2006. It is interesting to note that Davies acknowledges the philosophical discussions that surround the EBO debate and recognizes the reasons for this. However, he is equally determined to reduce the philosophical challenges presented by the EBO concept into analytical models, which is amply reflected in the title of his work.

- 47 See, for example, Quincy Wright, *A Study of War*, (Chicago: University of Chicago Press, 1964); Gat, *War in Human Civilization*; Gray, *Another Bloody Century: Future War*; Geoffrey Blainey, *The Causes of War*, 3rd edition, (New York: The Free Press, 1988).
- 48 Amy Weinstone, *Avatar Bodies: A Tantra for Posthumanism*, (Minneapolis: University of Minnesota Press, 2004), p. 17.
- 49 Gregory Fried, *Heidegger's Polemos – From Being to Politics*, (Yale: Yale University Press, 2000), p. 75.
- 50 Kant had identified a set of four antinomies: (1) the limitation of the universe in respect of space and time, (2) the theory that the whole consists of indivisible atoms (whereas, in fact, no such atoms exist), (3) the problem of freedom in relation to universal causality, and (4) the existence of a necessary being. His struggle with bringing Religion within the limits of Reason was his attempt to solve the last antinomy, namely, the existence of a necessary being.
- 51 Recursion, in mathematics and computer science, is a method of defining functions in which the function being defined is applied within its own definition. The term is also used more generally to describe a process of repeating objects in a self-similar way. See Douglas R. Hofstadter, *Godel, Escher, Bach: An Eternal Golden Braid*, (New York, NY: Basic Books, 1999), particularly, Chapter 5. An early and more technical discussion on recursion theory may be found in Kurt Godel, *On Formally Undecidable Propositions of Principia Mathematica and Related Systems*, (London: Dover Publications, 1992).
- 52 See, for example, Gray, *Modern Strategy*, (1999); *Another Bloody Century: Future War*, (2005); Michael Howard, *Causes of War*, (Harvard, MA: Harvard University Press, 1983); Hew Strachan and Andreas Herberg-Rothe, eds, *Clausewitz in the Twenty-First Century*, (Oxford: OUP, 2007), pp. 1–13.
- 53 It is this reification of a grand narrative of science and technology that cripples Bousquet's otherwise excellent account of "the scientific way of warfare." See Antoine Bousquet, *The Scientific Way of Warfare: Order and Chaos on the Battlefields of Modernity*, (London: Hurst Publishers, 2009), pp. 10–24.
- 54 Keith Ansell Pearson, "Viroid Life: On Machines, Technics and Evolution," in Keith Ansell Pearson, ed., *Deleuze and Philosophy: The Difference Engineer*, (London: Routledge, 1977), p. 180.
- 55 Martin Heidegger, *The Question Concerning Technology and Other Essays*, Trans and Intro., William Lovitt, (New York: Harper Torchbooks, 1977), pp. 14–19.
- 56 Bernard Stiegler, *Technics and Time, 1 – The Fault of Epimetheus*, Trans. R. Beardsworth and G. Collins, (Stanford: Stanford University Press, 1998), pp. 9, 24.
- 57 Ibid. p. 10.
- 58 Manuel de Landa, *War in the Age of Intelligent Machines*, (New York: Zone Books, 1991), pp. 105–25.
- 59 "The GIG Vision – Enabled by Information Assurance," National Security Agency (NSA) – Central Security Service, Available at http://www.nsa.gov/ia/programs/global_industry_grid/index.shtml. Last accessed on December 4, 2008. As the NSA website puts it, "[T]he overarching objective of the GIG vision is to provide the National Command Authority (NCA), warfighters, DoD personnel, Intelligence Community, business, policy-makers, and non-DoD users with information superiority, decision superiority, and full-spectrum dominance." See also, Smith, *Effects Based Operations*, pp. 157–92.
- 60 This refrain is constant as is evidenced by the mention it gets in most texts relating to war, strategy, and military theory. See, for example, Gray, *Modern Strategy*, (1999); Vice Admiral Arthur K. Cebrowski, US Navy, and John J. Garstka, "Network-Centric Warfare: Its Origin and Future," in the *Proceedings Naval Institute Magazine*, Vol. 124/1/1/139, January 1998. Available at http://www.nsa.gov/ia/programs/global_industry_grid/index.shtml. Last accessed on March 24, 2010.

- 61 See, for example, Alberts, Garstka, and Stein., *Network Centric Warfare*, pp. 133–56; Smith, *Effects Based Operations*, pp. 296–352.
- 62 Friedrich Nietzsche, *Will to Power*, Trans. W. Kauffmann and R. J. Hollingdale, Ed. Kauffmann, (New York: Vintage Books, 1968), # 1067, p. 550.
- 63 See Rene Thom, *Structural Stability and Morphogenesis*, Trans. D. Fowler. (Boulder, CO: Westview Press, 1989). See also, Tim Clark, “Deleuze and Structuralism: Towards a Geometry of Sufficient Reason,” in *Deleuze and Philosophy: The Difference Engineer*, Ed. Keith Ansell Pearson, (London: Routledge, 1997), p. 60. Note that the sense in which the word “disaster” is used here is drawn from Thom’s *Structural Stability and Morphogenesis*, in which he distinguishes between a set of “regular points” (which do not differ in kind from either each other or from points neighboring them) and “catastrophe points” (which display some discontinuity, that is to say, a difference in kind). In these terms, Disaster is thus a qualification that is intrinsic to points. Thus, despite the revolutionary difference that is discernable between points that are “regular” and “catastrophic,” there are, in the first instance, intensive differences, which co-constitute the potential of the points. Blanchot, of course, makes a similar argument, albeit in poetic terms. See Maurice Blanchot, *The Writing of The Disaster*, (New edition), Trans. Ann Smock, (Lincoln: University of Nebraska Press, 1995).
- 64 Tim Clark, “Deleuze and Structuralism: Towards a Geometry of Sufficient Reason,” p. 58.
- 65 Gilles Deleuze, *Difference and Repetition*, Trans. Paul Patton, (New York: Columbia University Press, 1994), p. 162.
- 66 Ibid., p. 275.
- 67 Fried, *Heidegger’s Polemos – From Being to Politics*, p. 15. Emphasis in original.
- 68 Ibid., p. 16.
- 69 Ibid., p. 15.
- 70 Ibid., p. 16.
- 71 “Machinic,” Bonta and Protevi inform us, is the “Adjectival form for the operation of the machinic assemblage or machine . . . the ‘cutting edge of deterritorialization’ that draws variations and mutations of an assemblage.” See M. Bonta and J. Protevi, *Deleuze and Geophilosophy: A Guide and Glossary*, (Edinburgh: Edinburgh University Press, 2004), p. 107.
- 72 Note what Bassford has to say in this context: “Within the Trinity discussion itself, because the third element is war’s subordination to rationality, it may be entirely appropriate to use the word policy in translating that particular clause. But we must always bear in mind the awkward fact that, while Clausewitz seems in this discussion to be speaking from the perspective of one side in a war (e.g., the people [singular], the government [singular], and the commander and his army [singulars]), his topic in this chapter is the nature of war, which must by definition be multilateral. The clash of two or more rational, opposing, unilateral policies brings us into the realm of multilateral politics. Thus there really is no reason to avoid translating the Trinity’s *politischen Werkzeuges* literally, i.e., as “political instrument.” See Christopher Bassford, “Tip-Toe through the Trinity or the Strange persistence of Trinitarian Warfare,” Working Draft, October 2007, Available at <http://www.clausewitz.com/CWZHOME/Trinity/Trinity8.htm>. Last accessed on May 20, 2008.
- 73 Sean Cubitt, *Digital Aesthetics*, (London: Sage Publications, 1998), p. 6.
- 74 The term “sense and evolve” is coined by me – though one can find recent references to a similar concept in operational doctrines, particularly those pertaining to COIN (counter-insurgency) operations.
- 75 See Keith Ansell Pearson, “Viroid Life: On Machines, Technics and Evolution,” pp. 180–81.
- 76 *Srimad-Bhagavad-Gita*, Trans. Swami Swarupanada, (Mayawati, India: Advaita Ashrama, 1998).

- 77 Ibid., #18, p. 106.
- 78 Ibid., #19, p. 107, #22, p. 108.
- 79 Ibid., #40, p. 52.
- 80 Ibid., #52, p. 60.

1 Prelude to Clausewitz

- 1 Peter Gay, *The Enlightenment: The Rise of Modern Paganism*, (London: W.W. Norton & Co., 1995), p. 235. Gay points to Thomas Aquinas' stance which allowed for the co-existence of reason and revelation, a point which was recently made by the current Pope.
- 2 Ibid., p. 234.
- 3 Ibid., p. 237.
- 4 Ibid., p. 236.
- 5 Ibid., p. 236.
- 6 Peter Gay, *The Enlightenment: The Science of Freedom*, (London: W.W. Norton & Co., 1996), p. 6.
- 7 Quoted in Ibid., p. 6.
- 8 John Sallis, *The Gathering of Reason*, 2nd edition, (New York, SUNY Press, 2005), p. 2.
- 9 Gay, *The Enlightenment: The Rise of Modern Paganism*, p. 141.
- 10 Peter A. Schoules, *Descartes and the Enlightenment*, (Edinburgh: Edinburgh University Press, 1989), pp. 67–69.
- 11 Charles Taylor, *Sources of the Self – The Making of the Modern Identity*, (Cambridge: Cambridge University Press), p. 145.
- 12 Ibid., p. 146.
- 13 Ibid., p. 145.
- 14 Ibid.
- 15 See, for example, Rene Descartes, *Discourse on Method and Meditations on First Philosophy*, Trans. Donald A. Cress, (Indianapolis: Hackett Publishing Co., 1980), pp. 89–100
- 16 It is interesting to note here that Taylor attributes the mode of “disenchanted engagement” to Descartes. He quotes a letter from Descartes to Elizabeth in this context, while offering the following explanation – “The proper stance is a detached engagement . . . that we try to attain the best, but that we be satisfied with what we get” (Taylor, *Sources of the Self*, p. 151). It is important to note Taylor's interpretation of Descartes' letter and his understanding of it. Taylor's presentation of Descartes' alleged “disenchanted engagement” is not akin to “desire-less action” as presented in the *Bhagavad-Gita*. Descartes, according to Taylor, suggests that Desire is under the control of Reason and is kept in check by Reason – this being a signature of Reason's instrumental function. Thus, if what Desire desires is not achieved by rational action or action guided by Reason, then another aspect of Reason comes into play which keeps Desire in check (Taylor, *Sources of the Self*, p. 151). This is very different, among other things, from an ontological point of view of the ‘desire-less actions’ suggested by the *Bhagavad-Gita*.
- 17 Taylor, *Sources of the Self*, p. 156.
- 18 Ibid.
- 19 Ernst Cassirer, *The Philosophy of the Enlightenment*, Trans. F. C. A. Koelin, Ed. J. P. Pettegrove, (Princeton: Princeton University Press, 1968), p. 7.
- 20 Ibid.
- 21 Ibid., p. 8
- 22 Quoting Taylor, we had earlier noted that “the Cartesian conception began from the premise that there was no pre-ordained a priori ‘order of Ideas’” (Taylor, *Sources of the Self*, p. 145). This may seem to be at variance with the assertion being made here that

- the Cartesian system did have an a priori "stance." It will be appreciated that the a priori order of Ideas that Taylor is referring to is that of Plato, which, in the context of Descartes, should be understood as the Divine, which Descartes was attempting to implicitly suborn. This, however, does not contradict the Other a priori that Descartes did invoke – the Cartesian notion of the Self.
- 23 Cassirer notes two examples from the eighteenth century – that of D'Alembert and Condillac – making this distinction. D'Alembert, in the "Preliminary Discourse" to the French Encyclopedia makes this distinction the central point of his argument and Condillac in his "Treatise on Systems," gives it explicit form and justification. See Cassirer, *The Philosophy of the Enlightenment*, p. 8.
 - 24 Gay, *The Enlightenment: The Science of Freedom*, p. 27.
 - 25 Ibid.
 - 26 Roger Smith, *The Fontana History of the Human Sciences*, (London: Fontana Press, 1997), p. 84.
 - 27 Ibid., pp. 85–86.
 - 28 Ibid., p. 89. Emphasis in original.
 - 29 Richard Tuck, *The Rights of War and Peace: Political Thought and the International Order from Grotius to Kant*, (London: Oxford University Press, 2001), p. 78.
 - 30 Hugo Grotius, *De Iure Praedae Commentarius*, I, Trans. Gladys L. Williams and Walter H. Zeydel, Carnegie Endowment for International Peace, (Oxford: Oxford University Press, 1950), pp. 10–11.
 - 31 Tuck, *The Rights of War and Peace*, p. 100.
 - 32 Richard Tuck, "The 'Modern' Theory of Natural Law," in A. Pagden, ed., *The Languages of Political Theory in Early Modern Europe*, (Cambridge: Cambridge University Press, 1987), p. 113. Quoted in Smith, *The Fontana History of the Human Sciences*, p. 91. See also Tuck, *The Rights of War and Peace*, p. 86.
 - 33 Ibid., pp. 88–89.
 - 34 Grotius, *De Iure Praedae Commentarius*, I, p. 18.
 - 35 Armstrong Starkey, *Warfare in the Age of Enlightenment, 1700–1789*, (Westport, CT: Praeger Publishers, 2003), p. 17.
 - 36 Emmerich de Vattel, "Of War," in *The Laws of Nations, or, the Principles of the Law of nature, Applied to the Conduct and Affairs of Nations and Sovereigns*, Ed. Joseph Chitty, (Philadelphia, PA: T and J. W. Johnson, 1861), pp. 296, 302. Quoted in Starkey, *Warfare in the Age of Enlightenment*, p. 17.
 - 37 See Emmerich de Vattel, *The Law of Nations or the Principles of Natural Law* (1758). Book 3, Chapter 3, # 26. Available at <http://www.lonang.com/exlibris/vattel/>. Last accessed on March 24, 2010.
 - 38 Thomas Hobbes, *Leviathan*, Ed. J. C. A. Gaskin, (Oxford: Oxford University Press, 1998), p. 31.
 - 39 Ibid., pp. 33–36.
 - 40 G. Rossini, "The Criticism of Rhetorical Historiography and the Ideal of Scientific Method: History, Nature and Science in the Political Language of Thomas Hobbes," in A. Pagden, ed., *The Languages of Political Theory in Early Modern Europe*, p. 113.
 - 41 Hobbes, *Leviathan*, p. 84.
 - 42 Ibid., p. 87.
 - 43 Ibid., p. 84.
 - 44 Smith, *The Fontana History of the Human Sciences*, p. 108.
 - 45 In this connection, it is important to note that Folard may be considered as being one of the first thinkers of the Enlightenment to apply *l'esprit philosophique* to war. See Starkey, *Warfare in the Age of Enlightenment*, p. 34.
 - 46 Quoted in Gat, *A History of Military Thought*, pp. 34–35. See also Michel Foucault, *Discipline and Punish – The Birth of the Prison*, (London: Penguin Books, 1991), p. 139.
 - 47 Gat, *A History of Military Thought*, pp. 34–35.

- 48 Ibid., p. 36.
- 49 Quoted in Gat, *A History of Military Thought*, p. 36.
- 50 Henry Guerlac, "Vauban: The Impact of Science on War," in Peter Paret, ed., *Makers of Modern Strategy – From Machiavelli to the Nuclear Age*, (Princeton, MA: Princeton University Press, 1986), pp. 73–74.
- 51 Gat, *A History of Military Thought*, p. 37.
- 52 Ibid., p. 40.
- 53 Maizeroy, *A System of Tactics*, (London, UK: 1781), quoted in Gat, *A History of Military Thought*, p. 42.
- 54 Gat, *A History of Military Thought*, p. 43.
- 55 Ibid.
- 56 Ibid., p. 44.
- 57 Maizeroy, quoted in Michel Foucault, *Discipline and Punish*, p. 168.
- 58 Maizeroy, quoted in Gat, *A History of Military Thought*, p. 44.
- 59 Ibid., pp. 44–45.
- 60 R. R. Palmer, "Frederick the Great, Guibert, Bulow: From Dynastic to National War," in Peter Paret, ed., *Makers of Modern Strategy*, p. 107.
- 61 Ibid.
- 62 Quoted in R. R. Palmer, "Frederick the Great, Guibert, Bulow: From Dynastic to National War," in Peter Paret, ed., *Makers of Modern Strategy*, p. 107.
- 63 Felix Gilbert, "Machiavelli: The Renaissance Art of War," in Peter Paret, ed., *Makers of Modern Strategy*, p. 26. Similar calls were made by others during this time. See, for example, Joseph Servan's *The Citizen Soldier* (1780) and even Montesquieu's *Reflections on the Causes of the Grandeur and Decline of the Romans* (1734), as mentioned in John A. Lynn, *Battle – A History of Combat and Culture from Ancient Greece to Modern America*, (Cambridge, MA: Westview Press, 2003).
- 64 See Niccolo Machiavelli, *The Prince*, Trans. William J. Connell, (New York: St. Martin's Press, 2005). See also his *Art of War*, Trans. Christopher Lynch, (Chicago: University of Chicago Press, 2005).
- 65 Gat, *A History of Military Thought*, p. 47.
- 66 Guibert, *A General Essay on Tactics*, p. xxi. Quoted in Gat, *A History of Military Thought*, p. 48.
- 67 Gat, *A History of Military Thought*, p. 48.
- 68 Guibert, *A General Essay on Tactics*, pp. xlvi–xlvi. Quoted in Gat, *A History of Military Thought*, p. 49.
- 69 Gat, *A History of Military Thought*, p. 49.
- 70 Guibert, *A General Essay on Tactics*, pp. 2–3. Quoted in Gat, *A History of Military Thought*, p. 49.
- 71 Ibid., p. 50.
- 72 R. R. Palmer, "Frederick the Great, Guibert, Bulow: From Dynastic to National War," p. 109.
- 73 Ibid.
- 74 Ibid., p. 110.
- 75 Ibid.
- 76 For a detailed account of Napoleon's operational and strategic art of war see David Chandler, *The Campaigns of Napoleon*, (New York: Scribner, 1973).
- 77 R. R. Palmer, "Frederick the Great, Guibert, Bulow: From Dynastic to National War," p. 107.
- 78 Ibid.
- 79 Ibid., p. 108.
- 80 Guibert, *A General Essay on Tactics*, pp. xxiii–xxiv. Quoted in Michel Foucault, *Discipline and Punish*, p. 169. My emphasis.
- 81 Foucault, *Discipline and Punish*, p. 165. My emphasis.
- 82 Ibid. For a fuller description of the Lancaster-Bell method and for a source of case

studies in support of Foucault's assertion, see John S. Hassard, "Researching Foucault's Research: Organization and Control in Joseph Lancaster's Monitorial Schools," in *Organization*, 9 (4) 615–39 (2002).

- 83 Foucault, *Discipline and Punish*, p. 164.
- 84 Ibid.
- 85 It was Napoleon who once said "Space we can regain; Time we can never recover."
- 86 Foucault, *Discipline and Punish*, p. 165.
- 87 Ibid., p. 167.
- 88 Ibid., p. 168.
- 89 Gat, *A History of Military Thought*, p. 54.
- 90 Ibid., pp. 56–58.
- 91 Ibid., p. 63.
- 92 Ibid., pp. 63–64.
- 93 Ibid., p. 65.
- 94 Ibid., p. 169.
- 95 When we say that a "conception of war," which, in part, owed its origins to the Cartesian construct of the Self began to take a definite shape, we do not imply that this conception of war, which was becoming increasingly understood in functional terms did not share its lineage with conceptions of war in the days of antiquity. Thus, for example, the Roman Imperial project, with its attendant Justinian Code of Laws could be viably read as being a sophisticated manifestation of a similar functional conception of war. We could take this lineage even further back by invoking the city-state system of the Greeks and the Vedic kingdoms of the Indian sub-continent.
- 96 Gat, *A History of Military Thought*, p. 77.
- 97 Ibid.
- 98 Ibid., p. 79.
- 99 Ibid., p. 87.
- 100 Ibid., p. 86.
- 101 Adam von Bulow, *The Spirit of the Modern System of War*, (London, 1806), pp. 198–99. Quoted in Gat, *A History of Military Thought*, p. 85.
- 102 John A. Lynn, *The Bayonets of the Republic: Motivation and Tactics in the Army of Revolutionary France, 1791–94*, (Boulder, CO: 1996), p. 56.
- 103 John Shy, "Jomini," in *Makers of Modern Strategy*, p. 143.
- 104 Antoine-Henri Jomini, *Traite des grandes operations militaires, contenant l'histoire des campagnes de Frederic II, comparees a celles de l'empereur Napoleon; avec un recueil des principes generaux de l'art de la guerre*, 2nd edition, 4 vols, (1811) 2: 312n. Quoted in Shy, "Jomini," p. 146.
- 105 Antoine-Henri Jomini, *Treatise on Grand Military Operations*, (New York, 1865), p. 445 and pp. 253–54. Quoted in Gat, *A History of Military Thought*, p. 114.
- 106 Gat, *A History of Military Thought*, p. 115.
- 107 Ibid. See also Antoine-Henri de Jomini, *The Art of War*, Intro. Charles Messenger, (London: Greenhill Books, 1992), pp. 60–71.
- 108 Jomini, *The Art of War*, p. 118. See also Lynn, *Battle – A History of Combat and Culture from Ancient Greece to Modern America*, p. 181. Lynn marks the ambivalence that Jomini displayed about the importance of "the decisive battle" and of the "art of maneuver."
- 109 Jomini, *The Art of War*, pp. 186–208.
- 110 James Marshall-Cornwall, *Napoleon as Military Commander*, (London: Penguin Books, 2002), p. 25.
- 111 Jomini, *The Art of War*, pp. 16–35.
- 112 It should be borne in mind that Jomini did consider the case of the effects of guerrilla operations on an army of regular formations. (See John Shy's otherwise rather disparaging commentary on Jomini's "art of war" in *Makers of Modern Strategy*, p. 170.) Jomini, of course, understood such operations in the context of "civil, religious, or

national war, or wars of opinion, which were armed struggles but without regular armies." Indeed, Jomini, himself had experienced two such campaigns in Spain and in Russia. To combat such a situation, Jomini had suggested that the regular army needed to "occupy" the enemy territory – a project that Napoleon tried and failed as is evidenced by his experiences in the Spanish Peninsula. It also interesting to note the significant parallels between this Jominian suggestion and the operations being engaged in by the Allied Forces in Iraq post the overthrow of the regime of Saddam Hussein in 2003.

- 113 Shy, "Jomini," p. 143.
- 114 Jomini, *The Art of War*, p. 180 See footnote.
- 115 Ibid., p. 43.
- 116 Ibid., p. 45.
- 117 Ibid., p. 46.
- 118 Ibid.
- 119 Ibid., p. 47. My emphasis.
- 120 The brevity of this overview, given the focus of this study, has resulted in a rather skewed account of Enlightenment philosophies, particularly that of the rationalist school. Thus, for example, the contribution of Leibnitz (as an exponent of the Rationalist School) is glaringly missing from this account. The author pleads guilty of such omissions which are not due to any measure of oversight; rather, they are deliberate. Important as these "schools" of philosophy are, including them would have made this study unwieldy and unmanageable.
- 121 Giorgio Agamben, *Homo Sacer – Sovereign Power and Bare Life*, Trans. Daniel Heller-Roazen, (Stanford, MA: Stanford University Press, 1998), p. 11.
- 122 Michel Foucault, *Society Must Be Defended*, (London: Allen Lane, 2003), p. 44.
- 123 Foucault, *Discipline and Punish*, pp. 135–69.
- 124 Foucault, *Society Must Be Defended*, p. 89. My emphasis.
- 125 Ibid., pp. 89–93.
- 126 Ibid., pp. 93–94.
- 127 Ibid., p. 95.
- 128 Ibid., p. 96.
- 129 Ibid. My emphasis.
- 130 Michel Foucault, *Abnormal*, Trans. Graham Burchell, Intro. Arnold I. Davidson, Foreword, F. Ewald and A. Fontana, (New York, NY: Picador, 2003), pp. xvii–xxv.
- 131 Carl Schmitt, *The Concept of the Political*, Trans. and Intro. G. Schwab (New Intro. Tracy B. Strong), (Chicago: University of Chicago Press, 1996).

2 Clausewitz and the architectonic of war

- 1 Jonathan Israel, *Enlightenment Contested: Philosophy, Modernity, and the Emancipation of Man, 1670–1752*, (New York: Oxford University Press, 2008), p. 49.
- 2 Azar Gat, *A History of Military Thought – From the Enlightenment to the Cold War*, (Oxford: Oxford University Press, 2001), pp. 195–97. It should be noted that Clausewitz explicitly acknowledges his debt to Montesquieu, though his intellectual debt to Kant remains obscure and unacknowledged. See Carl von Clausewitz, "Comment," *On War*, Ed. and Trans. Michael Howard and Peter Paret, (Princeton, NJ: Princeton University Press, 1984), p. 63.
- 3 See, for example, Bernard Brodie, "On Clausewitz: A Passion for War," in *World Politics* 25, no. 2 (January 1973), p. 290 for the arguments in favor of a Hegelian Clausewitz. Parkinson provides the arguments in favor of a Kantian Clausewitz. See Roger Parkinson, *Clausewitz: A Biography*, 1st edition, (New York: Cooper Square Press, December, 2002).
- 4 See, for example, John A. Lynn, *Battle: A History of Combat and Culture from Ancient*

- Greece to Modern America*, (Cambridge, MA: Westview Press, 2003), p. 203. See also Michael Howard, *Clausewitz* (New York: Oxford University Press, 1983), pp. 13–14.
- 5 See, for example, Christopher Bassford, "John Keegan and the Grand Tradition of Trashing Clausewitz: A Polemic," *War and History*, November, 1994, I (3).
 - 6 An interesting feature of the scholarship surrounding Clausewitz is the availability of studies and analyses in two broad categories – (1) those that highlight the philosophical indebtedness of Clausewitz's thinking – early and mature – to various philosophical schools and impulses and/or (2) those that debate the applicability and relevance – or otherwise – of Clausewitz's theoretical efforts to current and emerging global conditions. See Gat, *A History of Military Thought*, pp. 219–37. For an account that calls for a change in the way we think of war – a reevaluation of all values – see Robert R. Leonhard, *Principles of War for the Information Age*, (New York, NY: Ballantine Books, 1998)
 - 7 See, for example, Bernard Brodie, "The Continuing Relevance of On War," in Clausewitz, *On War*; James King, "On Clausewitz: Master Theorist of War," *Naval War College Review* 30 (Fall 1977), p. 9; Bernard Brodie, "In Quest of the Unknown Clausewitz," *International Security* 1, no. 3 (Winter 1977), p. 66.
 - 8 Gat, *A History of Military Thought*, p. 192.
 - 9 Peter Paret, *Clausewitz and the State: The Man, His Theories and His Times*, (Princeton, NJ: Princeton University Press, 2007), p. 156.
 - 10 Quoted in Gat, *A History of Military Thought*, p. 192.
 - 11 Clausewitz, *On War*, p. 151.
 - 12 Ibid., pp. 151–152. Emphasis in original.
 - 13 Gat, *A History of Military Thought*, p. 193.
 - 14 Ibid.
 - 15 Quoted in Peter Paret, *Clausewitz and the State*, p. 167. Letter to Marie, October 5, 1807.
 - 16 Thus, for example, in the Preface to *Critique of Pure Reason*, Kant wrote: "Human reason has a peculiar fate in one kind of its cognitions: it is troubled by questions that it cannot dismiss, because they are posed to it by the nature of reason itself, but that it also cannot answer, because they surpass human reason's every ability" (*Critique of Pure Reason*, Trans. Werner S. Pluhar, Intro. Patricia W. Kitcher, [Indianapolis: Hackett Publishing Co., 1996], p. A vii). Schleiermacher, as Robbins, for example, shows us, "knew the difficulties of thinking religion. Like Kant, he knew that to locate the religious within the sphere of consciousness is already to reduce religion to an idol. But unlike Kant, Schleiermacher realizes that just as thinking has the danger of eclipsing the religious, so too does acting. Thus, for Schleiermacher, Kant's categorical imperative merely reinscribes the problem. Schleiermacher mediates his way between these extremes of consciousness (knowing and doing) by positing "a necessary and an indispensable third" Schleiermacher thus attempted to take the Kantian project further focusing particularly on the problem posed by religion to reason. See Jeffrey W. Robbins, "From Thinking to Religion: The Opening of Ideality in 19th Century Protestant Thought," *Journal for Christian Theological Research*, 5: 5 (2000). For an account of Schleiermacher's work, see Friedrich Schleiermacher, *On Religion: Speeches to its Cultured Despisers*, Trans. John Oman, (New York: Harper and Row, 1958). For Kant's account of religion, see Immanuel Kant, *Religion Within the Limits of Reason Alone*, Trans. Theodore M. Greene and Hoyt H. Hudson, (New York: Harper Torchbooks, 1960).
 - 17 Quoted in Gat, *A History of Military Thought*, pp. 194–95. My emphasis.
 - 18 Clausewitz, *On War*, p. 141.
 - 19 Ibid. My emphasis.
 - 20 In the context of the letter to Marie, Clausewitz refers to "virtue," where "virtue" is an a priori concept and category.
 - 21 Gat, *A History of Military Thought*, p. 196. Bassford makes a similar point. See

- Christopher Bassford, "Jomini and Clausewitz: Their Interaction," Paper presented to the 23rd Meeting of the Consortium on Revolutionary Europe, Georgia State University, 26 February 1993. Available at <http://www.clausewitz.com/CWZHOME/Jomini/JOMINIX.htm>. Last accessed in March, 2008.
- 22 Clausewitz, *On War*, pp. 141, 156.
 - 23 Ibid., p. 140, Emphasis in original.
 - 24 Ibid.
 - 25 Ibid., p. 146.
 - 26 Ibid., p. 127.
 - 27 Ibid., p. 128.
 - 28 Ibid., p. 131.
 - 29 Ibid., p. 137.
 - 30 Ibid., p. 142, my emphasis.
 - 31 Ibid., p. 151.
 - 32 Ibid., p. 132.
 - 33 Ibid., p. 151.
 - 34 Ibid.
 - 35 Ibid. My emphasis.
 - 36 Ibid., p. 152.
 - 37 Clausewitz, *On War*, p. 151.
 - 38 Ibid.
 - 39 Ibid.
 - 40 Of course, scholars like Bassford will argue this differently. Thus, for example, note what he says in the context of how to read Clausewitz: "There are essentially two ways to read Clausewitz. The first is to pore through the pages of *On War* looking for practical hints and military prescriptions. These are certainly present, despite Clausewitz's insistence that fundamental theory must be descriptive, not prescriptive." Further, in a related footnote, Bassford criticizes Keegan for ignoring this. Therein he notes: "Keegan . . . ignores this fundamental of Clausewitzian theory and says that Clausewitz was "struggling to advance a universal theory of what war *ought* to be, rather than what it actually was and had been" (see Christopher Bassford, "John Keegan and the Grand Tradition of Trashing Clausewitz: A Polemic." It is interesting to note that the footnote quoted in its entirety earlier critiques Keegan for assuming that Clausewitz was advancing a universal theory of "what war ought to be." The critique is not about Keegan assuming that Clausewitz was indeed propounding a universal theory of war. Read in this way, it could thus be said that Bassford does not contest the notion that Clausewitz was propounding a "universal theory of war." Seen in this light, then, however valid Bassford's immediate critique of Keegan's reading of Clausewitz may be, nevertheless, essentially, a "universal theory of war" is not limited to a descriptive role, it is prescriptive too else the word "universal" loses, for lack of a better word, its universality.
 - 41 Quoted in Gat, *A History of Military Thought*, pp. 194–95.
 - 42 Clausewitz, *On War*, p. 141. My emphasis. It is necessary to note that the apparent distinction between Jomini and Clausewitz, as has been suggested by a number of military theorists and scholars, may not be as clear-cut as they may have suggested. For a cogent analysis of the inter-relationship between Jomini and Clausewitz, see Christopher Bassford, "Jomini and Clausewitz: Their Interaction," Georgia State University, 26 February 1993. See also, Major Francis S. Jones (USAF). "Analysis and Comparison of the Ideas and Later Influences of Henri Jomini and Carl von Clausewitz," Paper, Maxwell Air Force Base, AL: Air Command and Staff College, April 1985.
 - 43 Quoted in Hugh Honour, *Romanticism*, (New York: Westview Press, 1979), p. 22.
 - 44 Lynn, *Battle: A History of Combat and Culture from Ancient Greece to Modern America*, p. 190.
 - 45 Ibid., p. 191.
 - 46 Howard Caygill, *A Kant Dictionary*, (Oxford: Blackwell Publishing, 2006), pp. 75–77.

- 47 Lynn, *Battle: A History of Combat and Culture from Ancient Greece to Modern America*, p. 191.
- 48 Clausewitz, *On War*, p. 75.
- 49 See <http://www.lonang.com/exlibris/vattel/>. Book 3, Chapter 3, # 26. Last accessed on March 24, 2010.
- 50 Clausewitz, *On War*, p. 76. Emphasis in original.
- 51 Ibid., pp. 75–89, 85.
- 52 Ibid., p. 89. My emphasis.
- 53 Katherine L. Herbig makes a similar point though, as we will see, Herbig's assessment is deeply problematic, indeed contradictory, when we discuss the Chance and the Genius later. See Katherine L. Herbig, "Chance and Uncertainty in *On War*," in Michael Handel, ed., *Clausewitz and Modern Strategy*, (Oxford: Frank Cass, 1986), pp. 95–116.
- 54 Gat, *A History of Military Thought*, p. 225.
- 55 Clausewitz, *On War*, pp. 488–89.
- 56 Ibid., p. 488.
- 57 Gat, *A History of Military Thought*, p. 215.
- 58 Clausewitz, *On War*, p. 593.
- 59 Ibid., pp. 488–89.
- 60 Ibid., p. 579.
- 61 Ibid., p. 89. My emphasis. Note that Clausewitz, elsewhere in *On War*, insists that "war has no logic, it only has a grammar." This is, to say the least, a most curious statement for Clausewitz is claiming that a "grammar" is bereft of logic.
- 62 Ibid., p. 87. My emphasis.
- 63 Ibid., p. 78. My emphasis.
- 64 Clausewitz, as this study suggests, implies a non-human conception of the "logic of war." In this sense, it is outside the framework of Reason. But, as we will see, this is strictly not the case.
- 65 Clausewitz, *On War*, pp. 592–93.
- 66 Ibid., p. 581. Emphasis in original.
- 67 Gat, *A History of Military Thought*, pp. 212–16.
- 68 Ibid., pp. 488–89; see also Gat, *A History of Military Thought*, p. 215.
- 69 Ibid., p. 216.
- 70 Clausewitz, *On War*, pp. 579–81.
- 71 See, for example, Ibid., p. 78.
- 72 Ibid., p. 581.
- 73 Ibid., p. 579. Note, Gat, in his *A History of Military Thought*, translates *der philosophischen Vorstellungsweise* as "philosophical conception" (p. 221) whereas Howard and Paret in their standard translation of *On War* render it as "the theoretical concept." We have followed the Howard/Paret version.
- 74 Ibid., p. 579.
- 75 Ibid., My emphasis.
- 76 Ibid., p. 580.
- 77 Ibid.
- 78 Note that the notion of "chance" being invoked in this specific context is different from that used by Clausewitz as an instrument to tame the phenomenon of war. We will have occasion to take a closer look at this Other notion of chance when we investigate Clausewitz's strategizing of chance and uncertainty later.
- 79 To be fair, this point of view is held by a number of students of Clausewitz. What these scholars say is that Clausewitz viewed the phenomena of chance and uncertainty as prospects, opportunities, situations that can be taken advantage of. Indeed, Clausewitz himself says so in *On War*. What these scholars do not highlight and what Clausewitz does not point out, however, is how this stance – that of exploiting chance – adopted by Clausewitz also reveals much about his strategic object – to devise an architectonic within which the discussion of war could possibly take place.

- 80 This is, in part, brilliantly documented by Ian Hacking in his *The Emergence of Probability: A Philosophical Study of Early Ideas about Probability, Induction and Statistical Inference*, (Cambridge, Cambridge University Press, 1999).
- 81 Kant, *Critique of Pure Reason*, (A vii), p. 5. It is curious to note that despite the "otherness" of Chance to Reason, nevertheless, they remained "adjacent" to each other.
- 82 Gat puts it well when he writes: "The young Clausewitz now developed a different, more comprehensive, and sophisticated synthesis of the new intellectual themes, stressing the diversity and living nature of human reality and centering on the conceptions of rules, genius, moral forces, factors of uncertainty, and history" (*A History of Military Thought*, p. 176).
- 83 Caygill, *A Kant Dictionary*, p. 37.
- 84 Michael Handel indirectly alludes to this. He says: "In developing a theoretical ideal type linked to reality by intervening variables, Clausewitz managed to construct a concise framework incorporating all elements necessary for the study of war." See *Clausewitz and Modern Strategy*, p. 5. It should be noted that Handel does not make the distinction within the concept of Absolute War as we have done. Handel is, however, alluding to the Clausewitzian architectonic that we have referred to earlier.
- 85 Clausewitz, *On War*, p. 86.
- 86 Handel, *Clausewitz and Modern Strategy*, p. 7. Scholars and students of war and strategic studies repeat this refrain endlessly. Among them Raymond Aron, Michael Howard, Peter Paret, Christopher Bassford, Martin van Creveld, and Colin Gray are prominent names.
- 87 Ibid. My emphasis.
- 88 Hermann Kahn, *Thinking about the Unthinkable in the 1980s*, (New York, NY: Simon & Schuster, 1984).
- 89 Clausewitz, *On War*, p. 581.
- 90 Nick Land, *The Thirst for Annihilation – George Bataille and Virulent Nihilism*, (London: Routledge, 1992), p. 150.
- 91 Pursuant to this, Beyerchen writes: "Clausewitz understood political participation as stimulus for, exercise of, and constraint upon power. He knew that neither the Revolution nor the reforms created to combat it could be rolled back for long, because, as he wrote in his manuscript *On War*, '... once barriers—which in a sense consist only in man's ignorance of what is possible—are torn down, they are not so easily set up again'." See Alan D. Beyerchen, "Clausewitz, Nonlinearity, and the Importance of Imagery," in D. S. Alberts and T. S. Czerwinski, eds, *Complexity, Global Politics and National Security*, (Washington, DC: National Defense University, 1997).
- 92 Michel Foucault, *Society Must Be Defended – Lectures at the College de France 1975–76*, Ed. M. Bertani and A. Fontana, Trans. David Macy, (London: Allen Lane, 2003), p. 15.
- 93 Gilles Deleuze, *Pure Immanence – Essays on a Life*, Trans. Anne Boyman, Intro. John Rajchman, (New York: Zone Books, 2001), pp. 26–27.
- 94 Clausewitz, *On War*, pp. 85, 101, 86.
- 95 Herbig, "Chance and Uncertainty in *On War*," p. 96.
- 96 Ibid., p. 96.
- 97 Ibid.
- 98 Ibid., p. 100.
- 99 Let us not forget that Clausewitz was a Major-General in the Prussian Army and, as such, had fought against Napoleon. Thus, he would have experienced war, albeit generally as a staff officer. During the infamous retreat of Napoleon from the gates of Moscow, he witnessed firsthand the terrible loss of life involved in the crossing of the River Berezina. His relationship with Scharnhorst, various staff-related assignments, and ultimately as the Director of the Staff College—during his stint at the War Office in Berlin—gave Clausewitz not simply a bird's eye view of the terrain of war, but also to relate to such a martial vista experientially. For an eyewitness account of the Battle of

- Borodino, see Carl von Clausewitz, *The Campaign of 1812 in Russia*, (New York: De Capo Press, 1995).
- 100 See, for example, Edward Luttwak, *Strategy: The Logic of War and Peace*, (Cambridge, MA: Harvard University Press, 1995); See also Thomas C. Schelling, *The Strategy of Conflict*, (Harvard: Harvard University Press, 2007)
- 101 See, for example, the first-person accounts of the experience of war beginning with Ernst Junger, *Storm of Steel*, Trans. M. Hoffmann, (London: Penguin Books, 2004).
- 102 Ian Hacking, *The Taming of Chance*, (Cambridge: Cambridge University Press, 2002), p. 1.
- 103 Gat, *A History of Military Thought*, p. 187.
- 104 Hacking, *The Taming of Chance*, p. 1.
- 105 Quoted in Gat, *A History of Military Thought*, p. 49.
- 106 Quoted in Foucault, *Discipline and Punish*, p. 169.
- 107 Foucault, *Discipline and Punish*, p. 165.
- 108 Howard, *Clausewitz*, p. 13.
- 109 Barry Watts, *Clausewitzian Friction and Future War*, McNair Paper Number 52 (Revised), October 1996. Available at <http://www.ndu.edu/inss/McNair/mcnair52/m52cont.html>. Last accessed on May 19, 2007.
- 110 Von Bulow cited in Paret, *Clausewitz and the State*, p. 92.
- 111 Ian Hacking, *The Taming of Chance*, p. 1; Foucault also makes the same point, particularly in his *Discipline and Punish* and in *Madness and Civilization – History of Insanity in the Age of Reason*, Trans. R. Howard, (London: Routledge, 1990).
- 112 It is worth pointing out that even Thucydides' celebrated account of the Melian Dialogue, which may be considered as an exemplary example of war-making at the meta-strategic level – despite its cold rationalism (particularly from the Athenian perspective) – was also ridden with the element of chance. Of course there is a viable case to argue that the Melians would have felt its impact more severely than the Athenians given the outcome of the exchange as reported by Thucydides. A more recent example would be the Cuban Missile Crisis. Again, in terms of military hardware and their efficient use, the US and Soviet strategists knew, with a large measure of accuracy, the outcomes of a clash of arms, particularly, nuclear weapons. These were and are commonly expressed in game-theoretic terms. However, at the level of Kennedy and Khrushchev, despite the plethora of scientific studies, analyses, and decision-aids at their disposal, the matter would have been riddled with very high degrees of chance and uncertainty.
- 113 Quoted in Gat, *A History of Military Thought*, p. 114. My emphasis.
- 114 Quoted in Paret, *Clausewitz and the State*, p. 191; see also Watts, *Clausewitzian Friction and Future War*.
- 115 Watts, *Clausewitzian Friction and Future War*,
- 116 Beyerchen, "Clausewitz, Nonlinearity and the Unpredictability of War," pp. 59–90.
- 117 Ian Hacking, *The Taming of Chance*, p. 9. See also Hacking, *The Emergence of Probability*.
- 118 Hacking, *The Emergence of Probability*, p. 12.
- 119 Clausewitz, *On War*, p. 101.
- 120 Ibid., p. 140.
- 121 Note that Beyerchen makes a distinction between these two elements – statistically random phenomena and micro causes. His argument, while elegant, remains suspect. It is interesting to note that Beyerchen does not allow for the amplification of micro causes to contribute to what under the laws of probability would be regarded as statistically random phenomena. See Beyerchen, "Clausewitz, Nonlinearity and the Unpredictability of War," pp. 59–90
- 122 Clausewitz, *On War*, pp. 119–20.
- 123 Ibid., p. 156
- 124 G. Deleuze and F. Guattari, *What is Philosophy?* Trans. Hugh Tomlinson and Burchell, (New York: Columbia University Press, 1994), p. 38.

- 125 *Ibid.*, p. 42.
- 126 *Ibid.*
- 127 *Ibid.*
- 128 Clausewitz, *On War*, pp. 119, 121.
- 129 Bernard Steigler, *Technics and Time*, I – The Fault of Epimetheus, Trans. R. Beardsworth and G. Collins, (Stanford: Stanford University Press, 1998), p. 17.
- 130 Clausewitz, *On War*, pp. 58, 63.
- 131 *Ibid.*, p. 70.
- 132 An exception to this would be the use of Jomini's *Art of War* as part of the training curriculum of the US Army. Thus, for example, Major Ebner (US Army, Combat Studies Institute) writes: "The US Army presents itself as a Clausewitzian organization. Officers in the Army fondly quote the Prussian theorist and, at the strategic level, his dictums dominate; political control of the military, war as an extension of policy, his trinity, etc. Consideration of Clausewitz's friction and fog of war has translated into the doctrine of *auftragstaktik* and maintenance of initiative at the lowest possible levels of command. At the tactical and operational levels, however, the US Army remains more firmly rooted in the ideals of Antoine-Henri Jomini. Jomini's scientific approach to understanding and succeeding at war lies at the heart of Army doctrinal operations. The American Army, in its collective description of war and its methods of planning operations in war, follows more closely the Swiss theorist than the Prussian. The US Army, particularly at the tactical and operational levels, espouses the collective genius of good staff work and the military decision-making process (MDMP) rather than the singular genius of military command embraced by Clausewitz. This reliance upon military science and method over the application of genius firmly defines the US Army, tactically and operationally, as a Jominian institution." See Major Gregory Ebner, "Scientific Optimism: Jomini and the US Army," The US Army Professional Writing Collection. Available at http://www.army.mil/professionalwriting/volumes/volume2/july_2004/7_04_2_pf.html. Also available at <http://www-cgsc.army.mil/csi/research/writing/Papers%20c600/Commendebner2.asp>. Last accessed on January, 2008.
- 133 It must be reiterated that Clausewitz, at least in *On War*, did not make any direct or specific mention about the immanence of chance and uncertainty. However, as we have seen, there are a number of indications in his text that he may have had intuited this.
- 134 Hacking, *The Taming of Chance*, p. 16.
- 135 *Ibid.*, p. 1.
- 136 Michel Foucault, "Governmentality," in James D. Faubion, ed., *Essential Works of Foucault 1954–1984*, Vol. 3, (London: Penguin Books, 2002), p. 202.
- 137 *Ibid.*
- 138 Hacking, *The Taming of Chance*, p. 18.
- 139 *Ibid.*, p. 18.
- 140 Michel Foucault, *Security, Territory, Population – Lectures at the College De France 1977–78*, Ed. Michel Senellart, Trans. Graham Burchell, (London: Palgrave Macmillan, 2007), p. 120, see footnote †.
- 141 Michel Foucault, "About the Concept of the 'Dangerous Individual'," in James D. Faubion, ed., *Essential Works of Foucault 1954–1984*, Vol. 3, (London: Penguin Books, 2002), p. 186.
- 142 Michel Foucault, *Abnormal*, Trans. Graham Burchell, Intro. Arnold I. Davidson, Foreword, F. Ewald and A. Fontana, (New York, NY: Picador, 2003), p. 48.
- 143 Hacking, *The Taming of Chance*, p. 35.
- 144 *Ibid.*, p. 3.
- 145 Michel Foucault, *The Order of Things – An Archeology of the Human Sciences*, (London, UK: Routledge Classics, 2003), pp. 80–83. For an implicit critique of this Foucauldian position and its related methodology see George Steiner's review of *The Order of Things*. George Steiner, "The Mandarin of the Hour – Michel Foucault,"

February 28, 1971, Copyright 1998 *The New York Times Company*. Available at <http://cogweb.ucla.edu/Abstracts/Foucault.html>. Last accessed on January 2008.

- 146 Foucault, *The Order of Things*, p. 82.
- 147 Ibid.
- 148 Foucault, *Security, Territory, Population*, p. 63.
- 149 Foucault, *The Order of Things*, p. xix.
- 150 Ibid., p. xxi.
- 151 Foucault, *The Order of Things*, p. xix.
- 152 Ibid. Emphasis in original.
- 153 Ibid., pp. xix–xx
- 154 Ibid., p. xix
- 155 Ibid., p. xxii. Emphasis in original.
- 156 Clausewitz, *On War*, p. 156.
- 157 Gat, *A History of Military Thought*, p. 213.
- 158 Clausewitz, *On War*, p. 157.
- 159 Ibid., pp. 157–58. Emphasis in original.
- 160 Ibid., p. 140.
- 161 Gat, *A History of Military Thought*, pp. 179–80.
- 162 Quoted in Ibid., p. 178.
- 163 Clausewitz, *On War*, p. 136. My emphasis.
- 164 Immanuel Kant, *Critique of Judgment*, Trans. James. C. Meredith, (London: Oxford University Press, 1961), pp. 168, 181.
- 165 If we take Foucault's account of the disappearance of the Classical episteme and the subsequent turn to the union of history and semiotics and of the rise of what he refers to the "interpretive disciplines," we find this there is a strong resonance between the kind of functions that the Clausewitzian genius performs. For, as Clausewitz puts it, "what the genius does is the best rule." In this connection also note how Dillon marks the function of the commander or the general – the giver of signs. See Michael Dillon, "Intelligence Incarnate: Martial Corporeality in the Digital Age," *Body & Society*, 2003, 9 (4).
- 166 Clausewitz, *On War*, p. 100.
- 167 Foucault, *The Order of Things*, p. xxii.
- 168 Ibid.
- 169 Clausewitz, *On War*, p. 100. Emphasis in original.
- 170 Ibid.
- 171 Ibid., pp. 101–102. Emphasis in original.
- 172 Ibid., p. 102.
- 173 Gilles Deleuze, "The Idea of Genesis in Kant's Esthetics," in *Desert Islands and Other Texts, 1953–1974*, Ed. David Lapoujade, Trans. M. Taormina, (New York, NY: Semiotext(e), 2004), p. 67.
- 174 Ibid.
- 175 Ibid., p. 57.
- 176 Ibid. Emphasis in original.
- 177 Ibid., p. 58.
- 178 Ibid., pp. 58–59.
- 179 Ibid.
- 180 Ibid., p. 69.
- 181 Ibid.
- 182 Ibid., p. 71.
- 183 Foucault, *The Order of Things*, p. xx.
- 184 Ibid., p. xxi.
- 185 Ibid., p. xxiii.
- 186 Clausewitz, *On War*, p. 112.
- 187 Deleuze, "The Idea of Genesis in Kant's Esthetics," p. 69.

3 Machining (network-centric) war

- 1 Roger D. Launius, NASA Chief Historian, "Sputnik and the Dawn of the Space Age," Available at <http://www.hq.nasa.gov/office/pao/History/sputnik/sputorig.html>. Last accessed on July 28, 2004.
- 2 K. Hafner and M. Lyon, *Where Wizards Stay Up Late – The Origins of the Internet*, (New York, NY: Touchstone Books, 1998), pp. 11–20.
- 3 Mark Buchanan, *Small World – Uncovering Nature's Hidden Networks*, (London: Phoenix Publications, 2003), p. 73. See also "ARPA and the ARPANET – A Brief History," Available at <http://www.computermuseum.li/Testpage/99HISTORYCD-ARPA-History.HTM>. Last accessed on July 28, 2004.
- 4 Michael and Ronda Hauben, "Behind the Net: The Untold History of the ARPANET and Computer Science," in *Netizens: On the History and Impact of Usenet and the Internet*, Net Book, Available at <http://www.columbia.edu/~rh120/ch106.x07>. Last accessed on July 28, 2004. See also "ARPA and the ARPANET – A Brief History," Available at <http://www.computermuseum.li/Testpage/99HISTORYCD-ARPA-History.HTM>. Last accessed on July 28, 2004.
- 5 James Moffat, *Complexity Theory and Network-Centric Warfare*, Information Age Transformation Series, (Washington, DC: US DoD, CCRP, 2003), p. 2.
- 6 Glenn E. James, Major USAF, *Chaos Theory – The Essentials for Military Applications*, The Newport Papers, Number 10, (Newport, RI: Naval War College, 1996), p. 5.
- 7 Peter Coventry and Roger Highfield, *Frontiers of Complexity – The Search for Order in a Chaotic World*, (New York, NY: Ballantine Books, 1995), p. 169.
- 8 *Ibid*, p. 170.
- 9 James Gleick, *Chaos – The Amazing Science of the Unpredictable*, (London: Random House, 1988), p. 23.
- 10 See, for example, Mark Dery, *Escape Velocity: Cyberculture at the end of the Century*, (London: Hodder & Stoughton, 1996).
- 11 Moore's Law states: "The complexity for minimum component costs has increased at a rate of roughly a factor of two per year," in "Cramming More Components onto Integrated Circuits," Gordon E. Moore, *Electronics Magazine*, April 19, 1965.
- 12 "In the Digital Decade, you'll no longer think of the PC as a tool you use only to carry out specific tasks it will become something you come to rely on all the time. The power of the PC will be as ubiquitous and reliable as electricity, and vastly more useful than any single device we use today." – Bill Gates, Chairman and Chief Software Architect, Microsoft Corp., in "Moving into the Digital Decade," October 29, 2001. Available at <http://www.microsoft.com/presspass/office/10-29digitaldecade.mspx>. Last accessed on January 24, 2006.
- 13 Tom McEvilly, *The Shape of Ancient Thought*, Comparative Studies in Greek and Indian Philosophies, (New York: Allworth Press, 2002), pp. 36–37.
- 14 See Linda Williams, "Mirrors Without Memories: Truth, History and the New Documentary," *Film Quarterly*, Spring 1993, 46 (3), pp. 12. In this connection, the recent debates in the wake of the launch of Microsoft's Vista OS, centering on Digital Rights Management (DRM) are informative. See "Windows Vista Content Protection – Twenty Questions (and Answers)" available at <http://windowsvistablog.com/blogs/windowsvista/archive/2007/01/20/windows-vista-content-protection-twenty-questions-and-answers.aspx>. Last accessed on February 03, 2008. The matter at stake is a critical one, for the DRM-related debate stripped off its short-term profiteering vestige, is about asking – What is software? What does owning, making, commodifying mean in the context of information-based software? How does one assign value to that which actually exists, but which, in real material terms, also does not exist?
- 15 D. S. Papp, D. S. Alberts, and A. Tuyahov, "Historical Impacts of Information Technologies: An Overview," in D. S. Alberts and D. S. Papp, *The Information Age: An*

- Anthology on its Impact and Consequences*, (Washington, DC: INSS, National Defense University Press, 1998). Available at <http://www.ndu.edu/inss/books/Books%20-%201998/Information%20Age%20Anthology%20-%20Sept%2009/ch02a.html>. Last accessed on January 15, 2008.
- 16 Network-Centric War(fare) (NCW) is most commonly defined as “an information-superiority-enabled concept of operations that generates increased combat power by networking sensors, decision-makers, and shooters to achieve shared awareness, increased speed of command, higher tempo of operations . . . and a degree of self-sufficiency. In essence, NCW translates information superiority into combat power by effectively linking knowledgeable entities in the battlespace.” See D. S. Alberts, J. J. Garstka, and F. P. Stein, *Network Centric Warfare – Developing and Leveraging Information Superiority*, (Washington, DC: US DoD, CCRP, 2003), p. 2. See also, “Net-centric goal: a different military,” Dawn S. Onley, “Net-centric Goal: A Different Military,” November 04, 2003, Government Computer News (GCN). Available at http://www.gcn.com/print/22_32/24048-1.html?topic=interview. Last accessed on July 27, 2007.
 - 17 See, for example, the progressive modernization of the Indian Air Force – upgrading airframes, improving/updating radar, weapon, sensor suites, integration with Airborne Warning and Control System (AWACS) and mid-air refuellers and real-time linkage with aerospace sensor and communication platforms.
 - 18 For *battlespace*, see Thomas Blackmore, *War X: Human Extensions in Battlespace*, (Toronto: University of Toronto Press, 2005). See also W. Owens, *Dominant Battlespace Knowledge*, (Hawaii: University Press of the Pacific, 2002).
 - 19 See, for example, John Barry and Evan Thomas, “Military: The UAV Revolution – Up in the Sky, An Unblinking Eye,” *Newsweek*, June 9, 2008 Issue. Available at <http://www.newsweek.com/id/139432>. Last accessed on June 9, 2008.
 - 20 For an account of “gaps” and “cores” see Thomas, P. M. Barnett, *The Pentagon's New Map – War and Peace in the Twenty-first Century*, (New York: Putnam, 2004). For an official account of the “modular” stance, see Ronald O’ Rourke, “Navy Littoral Combat Ship (LCS): Background and Issues for Congress, *CRS Report (21305) for the US Congress*, (Washington, DC: Congressional Research Service, Library of Congress, 2005). See also the updated version (2008) Ronald O’ Rourke, “Navy Littoral Combat Ship (LCS) Program: Background, Oversight Issues, and Options for Congress,” May 23, 2008. Available at http://assets.opencrs.com/rpts/RL33741_20080523.pdf. Last accessed on June 27, 2008.
 - 21 Defense Update, “The Soldier as a System – Reflections from Soldier Technology, 2008,” Available at <http://www.defense-update.com/events/2008/summary/soldiertech08.htm>. Last accessed on March 24, 2010. See also, US Training and Doctrine Command (USTRADOC), “Soldier as a System Overview (SaaS),” prepared for The National Defence Industry Association, May, 2003. Available at www.dtic.mil/ndia/2003smallarms/camp.ppt. Last accessed on May 27, 2007.
 - 22 See, for example, Blackmore, *War X*. Also, the US Army’s 4th Infantry Division is a self-confessed example of a “digitized division.” See the 4th Infantry Division website at <http://www.hood.army.mil/4id/>. Last accessed on August 12, 2006. The classic theoretical works on swarming as a battle tactic remain the two texts on Swarm Theory in War by Edwards and Arquilla and Ronfeldt. For an example of the surge tactic see Space War, http://www.spacewar.com/reports/The_Strategy_Of_Surge_In_Iraq_999.html. Last accessed on April 2, 2007.
 - 23 Michael Foucault, *The Archeology of Knowledge and the Discourse on Language*, Trans. A. M. Sheridan Smith, (New York, NY: Tavistock Publications, 1972), p. 216.
 - 24 Ibid., p. 148.
 - 25 Ibid.
 - 26 Ibid., p. 37.
 - 27 Ibid., p. 217.

- 28 Julian Reid, "Foucault on Clausewitz: Conceptualizing the Relationship between War and Power," in *Alternatives* 28, 2003, pp. 1–28.
- 29 See Michel Foucault, *Madness and Civilization – History of Insanity in the Age of Reason*, Trans. R. Howard, (London: Routledge, 1990) for an incisive survey of the historical development of the phenomenon of "madness."
- 30 Ibid.
- 31 Ibid.
- 32 Michel Foucault, *Discipline and Punish – The Birth of the Prison*, Trans. A. Sheridan (London: Penguin Books, 1991), pp. 189–94.
- 33 Foucault suggests that the division between "true" and "false" "is a historically constituted division" and cites the example of the division between Hesiod and Plato where "the highest truth no longer resided in what discourse was, nor in what it *did*: it lay in what was *said*" (emphasis in original). See Foucault, *The Archeology of Knowledge and the Discourse on Language*, p. 218.
- 34 Ibid., p. 216. Foucault alludes to this when he marks the site where the web comprising of prohibitive and exclusive practices prominently appears. He finds, in his investigations, that this complex web "is most tightly woven . . . where the danger spots are most numerous . . . politics and sexuality."
- 35 Jacques Derrida, *Writing and Difference*, Trans. Alan Bass, (Chicago, IL: University of Chicago Press, 1978), p. 34.
- 36 Ibid., p. 36.
- 37 Ibid.
- 38 Michael Dillon, *The Politics of Security – Towards a Political Philosophy of Continental Thought*, (London: Routledge, 1996), pp. 113–14.
- 39 Ibid., p. 114.
- 40 Ibid.
- 41 Foucault, *The Archeology of Knowledge and the Discourse on Language*, p. 216.
- 42 G. Deleuze and F. Guattari, *A Thousand Plateaus – Capitalism and Schizophrenia*, (London: Continuum, 2003), p. 76.
- 43 Andrew F. Krepinevich Jr, *The Military-Technical Revolution – A Preliminary Assessment*, (Washington, DC: Center for Strategic and Budgetary Assessments, 2002), pp. 5–6 (of PDF version). Available at www.csbaonline.org/4Publications/Archive/R.20021002.MTR/R.20021002.MTR.pdf. Last accessed on July 28, 2003. This report was first prepared in July, 1992 at the behest of the Office of Net Assessment, US Government.
- 44 Ibid., p. 17.
- 45 Mary C. Fitzgerald, "The Soviet Military and the New Air War in the Persian Gulf," *Airpower Journal*, Winter 1991. Available at <http://www.airpower.maxwell.af.mil/airchronicles/apj/fitzg.html>. Last accessed on July 28, 2004. See also Krepinevich Jr, *The Military-Technical Revolution – A Preliminary Assessment*, pp. 5–6 (of PDF version).
- 46 Eliot A. Cohen, "Revolution in Military Affairs," *Foreign Affairs*, March–April, 1996, 75 (2), pp. 37–55.
- 47 Annette J. Krygiel, *Behind the Wizard's Curtain – An Integration Environment for a System of Systems*, (Washington, DC: US DoD, CCRP, 1999), p. 1.
- 48 John R. Boyd, *Patterns of Conflict*, Briefing, April/June/July 1979, Slide 24. Slide 41 in December 1986 Version of Briefing. Available at http://www.d-n-i.net/second_level/boyd_military.htm. Last accessed on July 28, 2004. A significant modification to Boyd's OODA Loop was made by Joel S. Larson. Larson's model was the SCDA (Sense, Compare, Decide, Act) Cycle, which makes allowance for the function of intelligence in his conception of "command and control as a process in which different components have different roles while operating as parts of a larger system." See George E. Orr, Major, *Combat Operations C3I: Fundamentals and Interactions*, (Maxwell AFB,

- AL: Air University Press, 1983), pp. 23–27. See also Kenneth Allard, *Command, Control, and the Common Defence*, Revised edition, (Washington, DC: US DoD, CCRP, 1996), p. 155. See also Jeffrey L. Cowan, Major (USAF) “From Air Force Fighter Pilot to Marine Corps Warfighting: Colonel John Boyd, His Theories on War, and their Unexpected Legacy,” Master’s Thesis, United States Marine Corps Command and Staff College, Marine Corps Combat Development Command, (Quantico, VA: Marine Corps University, 1999–2000). Available at http://www.defense-and-society.org/fcs/boyd_thesis.htm#ex%20summ. Last accessed on July 28, 2004.
- 49 Michael Dillon, “Network Society, Network-Centric Warfare and the State of Emergency,” in *Theory, Culture and Society*, 2002, 19 (4), pp. 71–79.
- 50 Personal interaction with Prof. Michael Dillon, Lancaster University, UK. August 4, 2004. I would also like to record my acknowledgment of Prof. Dillon for the section on the “technologization of language,” which unfolded over a series of personal meetings and email exchanges. See also Martin Heidegger, “The Question Concerning Technology,” in David Farrell Krell, ed., *Basic Writings*, Revised and Expanded edition, (London: Routledge, 2002), pp. 311–41.
- 51 Ibid. p. 322.
- 52 As opposed, say, to seeing language as poeticized in the way that, for example, Heidegger, Gadamer, and others do. See Michael Dillon, “Poststructuralism, Poetics and Complexity,” in *Theory, Culture and Society*, 2000, 17 (5), pp. 1–26.
- 53 Dillon, *The Politics of Security – Towards a Political Philosophy of Continental Thought*, p. 114.
- 54 John J. Garstka, “Network Centric Warfare: An Overview of Emerging Theory,” *Joint Staff Directorate for C4 Systems*. Available at <http://www.mors.org/publications/phalanx/dec00/feature.htm>. Last accessed on July 28, 2004.
- 55 Vice Admiral Arthur K. Cebrowski, (Rtd.) US Navy and John J. Garstka, “Network-Centric Warfare: Its Origin and Future,” *Naval Institute Proceeding Magazine*, Vol. 124/1/1/139, pp. 28–35. Available at <http://www.usni.org/Proceedings/Articles98/PROcebwski.htm>. Last accessed on July 28, 2004.
- 56 See Martin van Creveld, *Command in War*, (Cambridge, MA: Harvard University Press, 1985), for an extended but specific discussion of the issue of command and control in war.
- 57 Alan D. Beyerchen, “Clausewitz, Nonlinearity, and the Unpredictability of War,” *International Security*, Winter, 1992, 17 (3).
- 58 van Creveld, *Command in War*, pp. 232–60.
- 59 Jake Thackeray, “The Holy Grail,” in David Potts, ed., *The Big Issue: Command and Combat in the Information Age*, Information Age Transformation series, SCSC Occasional No. 45, (Washington, DC: US DoD, CCRP, 2003), p. 43.
- 60 Ibid., p. 48.
- 61 Arthur L. Money, Asst. Sec. of Defence (C3I), US DoD, “Report on Network-Centric Warfare—Sense of Report,” Submitted to the US Congress in partial fulfillment of Sec. 934 of the Defence Authorization Act for FY 01 (Public Law 106–398), March 2001. Available at http://www.dod.mil/nii/NCW/ncw_sense.pdf.
- 62 See David S. Alberts, *Information Age Transformation – Getting to a 21st Century Military*, Information Age Transformation Series, (Washington, DC: US DoD, CCRP, 2003), p. 46. In a footnote, Alberts points out that the COP is “not really a common picture, rather [it is] all about the consistency of the underlying data information [sic], and the ability to have “views” that can be tailored by participants to support their different roles and responsibilities.” It is significant that the distinction that Alberts is attempting to highlight is, in real terms, flawed. The consistency of data/information establishes the commonality of the data/information and the ability to have views is conditioned by the framework within which those views are formed and articulated. In other words, the COP sets the “conditions of possibility” wherein views can be formed. In this sense the COP is all about a “common picture.”

- 63 Michael Dillon, "x," *Body & Society*, 2003, 9 (4), pp. 123–47.
- 64 Vice Admiral Arthur K. Cebrowski, (Rtd.) US Navy, and John J. Garstka, "Network-Centric Warfare: Its Origin and Future."
- 65 Personal interaction and exchange of emails with Prof. Michael Dillon, Lancaster University, UK. August 4, 2004
- 66 Gilles Deleuze, *Negotiations*, (New York, NY: Columbia University Press, 1995), p. 181.
- 67 Alberts, Garstka, and Stein, *Network Centric Warfare – Developing and Leveraging Information Superiority*, p. 26.
- 68 It has been suggested that "business is not warfare," but this distinction remains suspect given the extensive cross-pollination of ideas, concepts, and operational procedures that takes place between these two domains. Thus both commercial and military operations entail strategizing, paying attention to logistics, ensuring efficient utilization of resources, developing effective chains of command, out-maneuvering competitors, etc. For a perspective that maintains that business and warfare are distinct see T. X. Hammes, "War Isn't a Rational Business," *Proceedings*, Naval Institute Magazine, July, 1998, 124 (7), pp. 22–25. For a comprehensive perspective that highlights the meshing of the worlds of technology, including that of business, and warfare see Manuel de Landa, *War in the Age of Intelligent Machines*, (New York, NY: Zone Books, 1991).
- 69 Alberts, Garstka, and Stein, *Network Centric Warfare – Developing and Leveraging Information Superiority*, p. 29.
- 70 Michael Porter, *Competitive Advantage – Creating and Sustaining Superior Performance*, (New York, NY: The Free Press, 1985), pp. 33–39.
- 71 Vice Admiral Arthur K. Cebrowski, (Rtd.) US Navy and John J. Garstka, "Network-Centric Warfare: Its Origin and Future," *Proceedings*, Naval Institute Magazine, January, 1998, 124 (1), pp. 28–35. Available at <http://www.usni.org/Proceedings/Articles98/PROcebrovski.htm>. Last accessed on July 28, 2004.
- 72 Hamel & Prahalad, *Competing for the Future*, (New Delhi: Tata Mcgraw-Hill Publishing Co. Ltd, 2002), pp. xi–xii. Emphasis in original.
- 73 Microsoft currently controls over 80 percent of the global market share of client-side operating systems and desktop technologies (a fact which is reflected in the number of anti-trust lawsuits that have been brought against the corporation). Microsoft also dominates the way people use the web, controlling more than 94 percent of the web browser market. See "Rivals nibble at Microsoft's IE," July 12, 2004, *BBC News*, UK Edition. Available at <http://news.bbc.co.uk/1/hi/technology/3886861.stm>. Last accessed on July 28, 2004. Google is the global leader in search engine technologies. The ubiquitous nature of Google is evident in the fact that the word that identifies the corporation is also used as a verb. Thus, when one searches or is asked to search the World Wide Web, one "googles the web." See Alfred Hermida, "Float offers insights into Google," April 30, 2004, *BBC News*, UK Edition. Available at <http://news.bbc.co.uk/1/hi/technology/3673157.stm>. Last accessed on July 28, 2004.
- 74 Pat A. Pentland, "Center of Gravity Analysis and Chaos Theory, or How Societies Form, Function and Fail," Master's Thesis, (Maxwell AFB, AL: School of Advanced Airpower Studies, 1993–94). Quoted in Tom Czerwinski, *Coping with the Bounds – Speculations on Nonlinearity in Military Affairs*, (Washington, DC: US DoD, CCRP, 1998), p. 261.
- 75 Roger Beaumont, *War, Chaos and History*, (Westport, CT: Praeger Publishers, 1994), p. xiv. See also Colin S. Gray, *Strategy for Chaos-Revolutions in Military Affairs and The Evidence of History*, (London: Frank Cass Publishers, 2002), p. 104.
- 76 N. Katherine Hayles, *Chaos Unbound: Orderly Disorder in Contemporary Literature and Science*, (New York, NY: Cornell University Press, 1990), p. 11.
- 77 Coventry and Highfield, *Frontiers of Complexity – The Search for Order in a Chaotic World*, p. 121.

- 78 Czerwinski, *Coping with the Bounds – Speculations on Nonlinearity in Military Affairs*, p. 12.
- 79 Moffat, *Complexity Theory and Network-Centric Warfare*, pp. 50–51
- 80 Czerwinski, *Coping with the Bounds – Speculations on Nonlinearity in Military Affairs*, pp. 12–21. See also Mitchell M. Waldrop, *Complexity: The Emerging Science at the Edge of Order and Chaos*, (New York, NY: Simon & Schuster, 1992), and Russell Ruthen, “Adapting to Complexity,” *Scientific American*, January, 1993, 268 (1), pp. 130–40.
- 81 Nietzsche’s words, in this context, are hauntingly reminiscent – “And do you know what ‘this world’ is to me? This world: a monster of energy, without beginning, without end; a sea of forces flowing and rushing together, eternally changing, eternally flooding back, with tremendous years of recurrence, with an ebb and flow of its forms.” Friedrich Nietzsche, *The Will to Power*, Ed. and Trans. W. Kaufmann and R. J. Hollingdale, (New York: Vintage Books, 1968) p. 550 # 1067.
- 82 James, Major USAF, *Chaos Theory – The Essentials for Military Applications*, pp. 2–3.
- 83 George Johnson, “Researchers on Complexity Ponder What It’s All About,” *New York Times*, May 06, 1997. Quoted in Czerwinski, *Coping with the Bounds – Speculations on Nonlinearity in Military Affairs* p. 24.
- 84 Beyerchen, “Clausewitz, Nonlinearity, and the Unpredictability of War,” pp. 59–90,
- 85 Clausewitz, *On War*, p. 77.
- 86 Ibid., p 119.
- 87 Barry Watts, *Clausewitzian Friction and Future War*, McNair Paper 52 (Revised), July, 2000. Institute for National Security Studies, (Washington, DC: National Defense University, 1996), p. 41 (PDF Version). Available at <http://www.ndu.edu/inss/McNair/mcnair52/mcnair52.pdf>. Last accessed on July 28, 2004. Clausewitz’s emphasis on the specific context of friction (i.e. on one’s own army) and its reduction has been criticized by John Boyd. It seems that Boyd’s primary accusation was levied on the basis of Clausewitz not emphasizing on maximizing the destabilizing effects of friction on one’s adversaries. Boyd explored that option in his famed OODA (Observation, Orientation, Decision, Action) Theory. See John R. Boyd, *Patterns of Conflict*.
- 88 It is interesting to note that the infiltration tactics devised by the Germans during the last stages of the First World War did produce some spectacularly positive results. However, it was too late to influence the course of the war.
- 89 Robert Leonhard, *The Art of Maneuver – Maneuver-Warfare Theory and AirLand Battle*, (New York, NY: Ballantine Books, 1991), p. 49.
- 90 It is pertinent to note that *Auftragstaktik* was not a wholly new concept to the doctrinal planners of the German defence establishment during the First World War. Its origins can be found in the Prussian military reforms beginning in 1808, following Prussia’s disastrous defeats by Napoleon. See H. W. Koch, *A History of Prussia*, (New York, NY: Longman, 1978), pp. 180–87.
- 91 Leonhard, *The Art of Maneuver – Maneuver-Warfare Theory and AirLand Battle*, p. 51.
- 92 This concept found its formal articulation in the works of Liddell-Hart, though it must be said that ancient philosophers of war, especially Sun Tzu, also propounded this concept. See B. H. Liddell-Hart, *Strategy*, 2nd Revised edition, (New York, NY: Meridian, 1991), p. 335. Here Liddell-Hart refers to the exploitation of the “line of least resistance.” See also B. H. Liddell-Hart, “The Man-in-the-Dark Theory of Infantry Tactics and the Expanding Torrent System of Attack,” *Journal of the Royal United Service Institution*, February 1921, LXVI (461).
- 93 Linda P. Beckerman, “The Non-Linear Dynamics of War,” *Science Applications International Corporation*, April 20, 1999. Available at http://www.belisarius.com/modern_business_strategy/beckerman/non_linear.htm. Last accessed on July 28, 2004.
- 94 Leonhard, *The Art of Maneuver – Maneuver-Warfare Theory and AirLand Battle*, p. 49.

- 95 Gary A. Vincent, 1st Lt., USAF, "A New Approach to Command and Control: The Cybernetic Design," *Airpower Journal*, Summer, 1993. Available at <http://www.airpower.maxwell.af.mil/airchronicles/apj/vincent.html>. Last accessed on July 28, 2004.
- 96 See John Robinson Pierce, *An Introduction to Information Theory*, 2nd Revised edition, (New York, NY: Dover Publications, 1980). See also "The Significance of Shannon's Work," Available at <http://cm.bell-labs.com/cm/ms/what/shannonday/work.html>. Last accessed on May 16, 2003.
- 97 See Living Internet, "Norbert Wiener Invents Cybernetics," Available at http://living-internet.com/i/i_wiener.htm. Last accessed on July 28, 2004. See also N. Katherine Hayles, *How We Became Post-Human: Virtual Bodies in Cybernetics, Literature and Informatics*, (Chicago, IL: University of Chicago Press, 1999), pp. 84-112.
- 98 van Creveld, *Command in War*, p. 3 and p. 240, respectively. See also S. Zuckerman, "Judgment and Control in Modern Warfare," *Foreign Affairs*, January, 1962, 40, pp. 196-213.
- 99 J. C. R. Licklider, "The Computer as a Communication Device" and "Man Computer Symbiosis," in *In Memoriam: J. C. R. Licklider 1915-1990*, (Palo Alto, CA: Systems Research Center), August 1990. Available at <ftp://gatekeeper.research.compaq.com/pub/DEC/SRC/research-reports/SRC-061.pdf> Last accessed on July 28, 2004.
- 100 Ibid.
- 101 Buchanan, *Small World—Uncovering Nature's Hidden Networks*, p. 75.
- 102 Ibid., p. 73. See also National Security Archive, "U.S. Nuclear History: Nuclear Arms and Politics in the Missile Age, 1955-68," Digital National Security Archive, Available at http://nsarchive.chadwyck.com/nh_essay.htm. Last accessed on July 28, 2004.
- 103 Ibid.
- 104 Paul Baran, *On Distributed Communications: Introduction to Distributed Communications Network*, (Santa Monica, CA: Rand Publications, August 1964), RAND Memorandum RM-3420-PR., Available at <http://www.rand.org/publications/RM/RM3420/>. Last accessed on July 28, 2004.
- 105 Buchanan, *Small World—Uncovering Nature's Hidden Networks*, p. 74.
- 106 Ibid.
- 107 Baran, "On Distributed Communications: Introduction to Distributed Communications Network."
- 108 RAND Corporation, "Paul Baran and the Origins of the Internet." Available at <http://www.rand.org/about/history/baran.html>. Last accessed on July 28, 2004. It should be noted that it was Donald Davies, a scientist working independently of Baran at the British National Physical Laboratory, who realized that it was inefficient for a computer to send an entire file to another computer in an uninterrupted stream of data. So, he conceived the use of a purpose-designed network employing packet switching in which the stream of bits is broken up into short messages, or "packets," that find their way individually to the destination, where they are reassembled into the original stream. The term "packet switching" is said to have originated from the work done by Davies. See "Data Pioneer Donald Davies Dies," Internet Society, Thursday November 15, 2001. Available at <http://www.isoc.org/internet/history/davies.shtml>. Last accessed on July 28, 2004. See also Internet Society, "Data Pioneer Donald Davies Dies," Thursday November 15, 2001. Available at <http://www.rand.org/publications/RM/RM3103/>. Last accessed on July 28, 2004.
- 109 Buchanan, *Small World—Uncovering Nature's Hidden Networks*, pp. 80-82. The original "mapping" of the Internet was done by Cheswick and Birch of Bell Laboratories and Carnegie Mellon University, respectively.
- 110 William J. Reed, "A Brief Introduction to Scale-Free Networks," Dept. of Mathematics and Statistics, University of Victoria, Canada, May 18, 2004. Available at http://www.math.uvic.ca/faculty/reed/draft_1.pdf. Last accessed on July 28, 2004.

- 111 Jan Matlis, "Scale-Free Networks," *Computer World*, November, 2002. Available at <http://www.computerworld.com/networkingtopics/networking/story/0,10801,75539,00.html>. Last accessed on July 28, 2004. See also Albert-Laszlo Barabasi, *Linked—The New Science of Networks*, (Boulder, CO: Perseus Books, 2002).
- 112 Buchanan, *Small World—Uncovering Nature's Hidden Networks*, p. 84.
- 113 Steven Shaviro, *Connected, or What it Means to Live in the Network Society*, (Minneapolis, MN: University of Minnesota Press, 2003), pp. 10–11.
- 114 This is a play on the classical Clausewitzian trinity. Clausewitz defined the components of the trinity as (1) primordial violence, hatred, and enmity; (2) the play of chance and probability; and (3) war's element of subordination to rational policy. See Clausewitz, *On War*, p. 89. See also C. Bassford and E. J. Villacres, "Reclaiming the Clausewitzian Trinity," *Parameters*, Journal of the US Army War College, Autumn 1995.
- 115 Martin C. Libicki, *The Mesh and the Net—Speculations on Armed Conflict in a Time of Free Silicon*, The Center for Advanced Concepts and Technology, Institute for National Strategic Studies (Washington, DC: National Defense University Press, 1996), p. 15.
- 116 A good example of this is the PARAM Padma super-computer designed by C-DAC of India. It is a cluster of 62 4-way, IBM pSeries P630 nodes, interconnected through a high performance System Area Network. See C-DAC Official Site. Available at <http://www.cdacindia.com/html/ctsf/padma/padma500.asp>. Last accessed on July 28, 2004.
- 117 van Creveld, *Command in War*, p. 5.
- 118 D. S. Alberts and R. E. Hayes, *Command Arrangements for Peace Operations*, The Center for Advanced Concepts and Technology, Institute for National Strategic Studies (Washington, DC: National Defense University Press, 1996), p. 6.
- 119 *Ibid.*, pp. 6–7.
- 120 *Ibid.*, p. 9.
- 121 van Creveld, *Command in War*, p. 258.
- 122 Alberts, Garstka, and Stein, *NetworkCentric Warfare—Developing and Leveraging Information Superiority*, p. 72.
- 123 *Ibid.*, p. 92.
- 124 *Ibid.*, p. 115.
- 125 *Ibid.*, p. 116.
- 126 Steven Shaviro, *Connected, or What it Means to Live in the Network Society*, p. 11.
- 127 *Ibid.*, p. 121.
- 128 Trace Gunsch, "The Wireless Road Ahead," *Military Information Technology*, July 09, 2004, 8 (5).
- 129 Steven Shaviro, *Connected, or what it means to live in the network society*, p. 42. In this connection, the work done by Norbert Wiener assumes importance. During the Second World War, Wiener worked on guided missile technology, and studied how sophisticated electronics used the feedback principle. Wiener noted that the feedback principle is also a key feature of life forms from the simplest plants to the most complex animals, which change their actions in response to their environment. Wiener developed this concept into the field of cybernetics. See Living Internet, "Norbert Wiener Invents Cybernetics." See also Hayles, *How We Became Post-Human: Virtual Bodies in Cybernetics, Literature and Informatics*, pp. 84–112.
- 130 It is arguable that the B2B (business to business) model is the original formulation of the networked phenomenon in the commercial world. This is evident if one notes the buyer-client relationship outside of the computing context. What technology has done is to secure the links between businesses and extend the links (now in near real time) to other areas such as B2C, etc. The following companies are often mentioned as "role models" of organizations engaged in Network-centric Operations (NCOs): Boeing (in terms of cross-team collaborations), IBM and Microsoft (in terms of cross-continental

"virtual operations"), Dell Computers (in terms of sense-respond market strategies), Wal-Mart (in terms of self-synchronization – from the retail floor to the manufacturing and assembly site) and DMG, Inc. (in terms of creating a new digital financial ecosystem characterized by the *Autobahn*, its automated trading service). See Alberts, Garstka, Hayes, and Signori, *Understanding Information Age Warfare*, Washington, DC: US DoD, CCRP, 2002), pp. 35–51.

131 Steven Metz, *Iraq and Evolution of American Strategy*, (Dulles, VA: Potomac Books, 2008), p. 57.

132 *Ibid.*, p. 58.

4 Theorizing war in the Age of Networks

1 Steven Shavero, *Connected, or What it Means to Live in the Network Society*, (Minneapolis, MN: University of Minnesota Press, 2003), p. 3.

2 See K. W. Jeter, *Noir*, (New York, NY: Bantam Books, 1999).

3 Noah Shachtman, "Big Brother Gets a Brain – The Pentagon's Plan for Tracking Everything that Moves," *Wired*, July 9–15, 2003. Available at <http://www.villagevoice.com/issues/0328/shachtman.php>. Last accessed on July 28, 2004. Known as the Combat Zones That See (CTS), it is a project being conducted under DARPA. See also DARPA Solicitation, BAA 03–15. Available at <http://dtsn.darpa.mil/ixo/solicitations/cts/index.htm>. Last accessed on July 28, 2004.

4 Brian Massumi, *Movement, Affect, Sensation – Parables for the Virtual*, (London: Duke University Press, 2002), p. 87.

5 Martin Libicki, *The Mesh and the Net – Speculations on Armed Conflict in a Time of Free Silicon*, The Center for Advanced Concepts and Technology, Institute for National Strategic Studies (Washington, DC: National Defense University Press, 1996), pp. 30–31. My emphasis.

6 As an aside, it is interesting to note given that the formulation of the RSC first emanated from the erstwhile USSR with its totalitarian form of government, one wonders whether NCW, in its emerging form, is as totalitarian in its interpretation as the regime that first pioneered it.

7 Martin van Creveld, *Command in War*, (Cambridge, MA: Harvard University Press, 1985), p. 258.

8 *Ibid.*, p. 235.

9 *Ibid.*, p. 258.

10 Kenneth Allard, *Command, Control, and the Common Defense*, Revised edition, (Washington, DC: US DoD, CCRP, 1996), p. 150.

11 Alberts, Garstka, and Stein, *Network-Centric Warfare – Developing and Leveraging Information Superiority*, (Washington, DC: US DoD, CCRP, 2003), p. 15.

12 *Ibid.*, p. 1.

13 Z. Khalilzad and J. White, eds, *Strategic Appraisal: The Changing Role of Information in Warfare*, Foreword by Andrew Marshall, MR-1016-AF, (Santa Monica, CA: RAND Corp., 1999), p. 8. Available at <http://www.rand.org/publications/MR/MR1016/>. Last accessed on July 28, 2004.

14 Arthur L. Money, Asst. Sec. of Defense (C3I), US DoD, "Report on Network-Centric Warfare – Sense of Report," Submitted to the US Congress in partial fulfillment of Sec. 934 of the Defense Authorization Act for FY 01 (Public Law 106–398), March 2001, p. 5. Available at http://www.dod.mil/nii/NCW/ncw_sense.pdf. Last accessed on July 28, 2004.

15 P. Evans and T. Wurster, "Strategy and the New Economics of Information," *Harvard Business Review*, September–October, 1997, 75 (5), pp. 71–84.

16 The emergence of "thin client" technology, in this context, is highly revealing.

17 D. S. Alberts, J. J. Garstka, R. E. Hayes, and D. A. Signori, *Understanding Information Age Warfare*, (Washington, DC: US DoD, CCRP, 2002), pp. 47–49.

- 18 Arthur K. Cebrowski, Vice Admiral, US Navy; Director, OFT, "Transformation and the Changing Character of War," *Transformation Trends*, Office of Force Transformation, US Dept. of Defense, June 17, 2004, "pp. 7–8. Available at http://www.oft.osd.mil/library/library_files/trends_370_Transformation%20Trends-17%20June%202004%20Issue.pdf. Last accessed on July 28, 2004.
- 19 Ibid., p. 7.
- 20 Alfred Thayer Mahan, *The Influence of Sea Power on History – 1660–1783*, (New York: Dover Publications, 1987), p. 25. See also Paul Kennedy, *The Rise and Fall of British Naval Mastery*, (London: Penguin Books, 2001), pp. 1–9.
- 21 Alberts, Garstka, Hayes, and Signori, *Understanding Information Age Warfare*, p. 55.
- 22 Ibid.
- 23 The Office of Force Transformation (OFT) was created at the behest of the former Secretary of Defense, Donald Rumsfeld, and was headed by Vice Admiral (Retd.) Arthur K. Cebrowski. The OFT was designed to operate not only as a focal point and as the catalyst of the transformation of the American Military, but also as being the advocate of the force transformation project. The OFT closed its doors on October 01, 2006. The reasons for its closure, however, remain unclear. Some suggest that given the relatively small size of the OFT, it fell prey to turf battles within the Pentagon, while others, like Thomas Barnett, suggest that the work of the OFT has become mainstream. See <http://www.defenseindustrydaily.com/us-office-of-force-transformation-to-close-oct-1-2006-02572/> (Last accessed on November 27, 2006).
- 24 Arthur K. Cebrowski, Vice Admiral, US Navy; Director, OFT, "Transformation and the Changing Character of War."
- 25 From the website of the Office of Force Transformation. Available at http://www.oft.osd.mil/what_is_transformation.cfm. Last accessed on July 28, 2004.
- 26 Ibid. Also recall in this context Foucault's observation. He said, particularly in the context of discourse and institutions, "[this is] a general recipe for the exercise of power over men: the mind as a surface of inscription for power, with semiology as its tool; the submission of bodies through the control of ideas." Michel Foucault, *Discipline and Punish – The Birth of the Prison*, Trans. A. Sheridan (London: Penguin Books, 1991), p. 102. The resonance of Foucault's observations and the activities of the OFT are startling.
- 27 Mark Buchanan, *Small Worlds – Uncovering Nature's Hidden Networks*, (London: Phoenix Books, 2003), p. 165.
- 28 Deleuze, *Negotiations*, (New York, NY: Columbia University Press, 1995), p. 174.
- 29 Lawrence Freedman, *The Evolution of Nuclear Strategy*, 3rd edition, (New York, NY: Palgrave Macmillan, 2003), pp. xviii–xix. See also Carl H. Builder, *The Masks of War – American Military Styles in Strategy and Analysis*, a RAND Corp. Research Study, (Baltimore, MD: Johns Hopkins University Press, 1989), pp. 47–56.
- 30 Williamson Murray and Mark Grimsby, "Introduction: On Strategy," in W. Murray, M. Knox, and A. Bernstein, eds, *The Making of Strategy: Rulers, States, and War*, (Cambridge: Cambridge University Press, 1999), p. 1.
- 31 Carl von Clausewitz, *On War*, Ed. and Trans. Michael Howard and Peter Paret, (Princeton, NJ: Princeton University Press, 1984), p. 128.
- 32 B. H. Liddell Hart, *Strategy*, 2nd Revised edition, p. 321.
- 33 See Colin S. Gray, *Modern Strategy*, (Oxford: Oxford University Press, 1999), pp. 16–44 for a summary of the definitional distinctions and for an engaging overview of the "dimensions of strategy." See also Murray and Grimsby, "Introduction: On Strategy," pp. 1–23.
- 34 Ibid., p. 8.
- 35 Robert R. Leonhard, *The Principles of War for the Information Age*, (New York, NY: Presidio Press, 1998), p. 9.
- 36 Alberts, Garstka, Stein, Signori, *Understanding Information Age Warfare*, p. xiii. See also Vice Admiral Arthur K. Cebrowski, "New Rules, New Era – Pentagon Must

- Embrace Information Age," *Defense News*, October 21–27, 2002, p. 28. The Admiral writes, "With the dramatic change in warfare being unleashed by the transition to the information age, future military capabilities must be judged using new criteria . . . Yet the deeper more profound debate is about the changing military rule sets that indicate new sources of power and how they are brought to bear . . . A new American way of war has emerged – network-centric operations." Available at <http://www.cdi.org/mrp/tt-21oct02.pdf> (pp. 1 & 5 respectively of PDF file). Last accessed on March 10, 2010.
- 37 US DoD, News Briefing – Secretary Rumsfeld and General Myers, Tuesday, February 12, 2002 – 11.31 a.m. EST. Available at http://www.defenselink.mil/transcripts/2002/t02122002_t212sdv2.html. Last accessed on July 28, 2004.
 - 38 *Joint Vision 2020 (JV 2020)* also marks this. There is an explicit recognition of the presence of friction in military operations and the need to induce frictional imbalance in the enemy. In the context of *JV 2020*, friction consists of 5 elements – (1) Effects of danger and exertion (2) Existence of uncertainty and chance (3) Unpredictability of the actions of others (4) Frailties of human and machines and (5) Humans. The last category is interesting in the context of NCW. See *Joint Vision 2020*, Chairman of the Joint Chiefs of Staff, Director for Strategic Plans and Policy, J5, Strategy Division, (Washington, DC: US Govt Printing Office), June 2000. p. 6 (of PDF file). Available at <http://www.dtic.mil/jointvision/jvpub2.htm>. Last accessed on July 28, 2004.
 - 39 See *ibid*.
 - 40 Alberts, Garstka, Hayes, and Signori, *Understanding Information Age Warfare*, p. 43.
 - 41 M. Bishop and E. O. Goldman, "The Strategy and Tactics of Information Warfare," in Emily O. Goldman, ed., *National Security in the Information Age*, (London: Frank Cass Publishers, 2004), p. 114.
 - 42 Alberts, Garstka, Hayes, and Signori, *Understanding Information Age Warfare*, p. 104.
 - 43 Bishop and Goldman, "The Strategy and Tactics of Information Warfare," in *National Security in the Information Age*, Ed. Emily O. Goldman, p. 113.
 - 44 Alberts, Garstka, Stein, and Signori, *Understanding Information Age Warfare*, p. 102.
 - 45 See Edward N. Luttwak, *Strategy – The Logic of War and Peace*, (Cambridge, MA: Belknap Press, 1995), p. 69.
 - 46 Alberts, Garstka, and Stein, *Network-Centric Warfare – Developing and Leveraging Information Superiority*, p. 51.
 - 47 James Hazlett, "Just-in-Time Warfare," in Stuart Johnson and Martin Libicki, ed., *Dominant Battlespace Knowledge*, The Center for Advanced Concepts and Technology, Institute for National Strategic Studies (Washington, DC: National Defense University Press, 1996), p. 116.
 - 48 In this context, it is instructive to note the research activities being conducted by the US Office of Naval Research, particularly in the field of computational neuroscience. See US Office of Naval Research, Science & Technology – Human Systems, Computational Neurosciences, Available at http://www.onr.navy.mil/sci_tech/personnel/342/. Last accessed on July 28, 2004.
 - 49 Alberts, Garstka, Hayes, and Signori, *Understanding Information Age Warfare*, pp. 169–84.
 - 50 The Global Command and Control System – Joint (GCCS-J) is an example of this. The "GCCS-J is the nation's premier system for the command and control of joint and coalition forces. It incorporates the force planning and readiness assessment applications required by battlefield commanders to effectively plan and execute military operations. The GCCS-J is fielded at 635 sites worldwide, all networked via the DoD's classified private Intranet." See Defense Information Systems Agency (DISA), "What is the Joint Global Command & Control Systems (GCCS-J)?" Available at <http://gccs.disa.mil/gccs/>. Last accessed on July 28, 2004. The GCCS formally replaced the WWMCCS (World Wide Military Command and Control System) of the Vietnam Era on June 30, 1997. See US DoD, "Global Command and Control

- System Fully in Place,” News Release. Available at http://www.dod.mil/releases/1997/b07091997_bt367-97.html. Last accessed on July 28, 2004.
- 51 Note the resemblance between the possibilities of a WAN interdiction capability with what in the commercial software project management sector is known as the Global Delivery Model (GDM). In simple terms, the “GDM is a framework for distributed project management and multi-location engagement teams . . . It provides clearly defined process guidelines emphasizing the importance of information flow and communication.” See The Boston Group, “Delivery Model.” Available at <http://www.thebostongroup.com/services/offshore/deliverymodel.asp#>. Last accessed on July 28, 2004.
 - 52 Alberts, Garstka, and Stein, *Network-Centric Warfare – Developing and Leveraging Information Superiority*, p. 84.
 - 53 DFI International Corporate Services, “Transformation Planning Guide Approved,” DoD Update, March 24, 2003. Available at <http://www.dfi-intl.com/shared/updates/dod/2003-03-24DoDUpdate.pdf>. Last accessed on July 28, 2004.
 - 54 Fred P. Stein, “Observations on the Emergence of Network Centric Warfare”, (Vienna, VA: Evidence Based Research, Inc, 1998). Available at http://www.dodccrp.org/research/ncw/stein_observations/steinncw.htm. Last accessed on July 28, 2004.
 - 55 Daniel Busch, Capt., US Navy, PEO TSC and Conrad J. Grant, “Changing the Face of War: The Co-operative Engagement Capability,” March 2003. Available at http://www.ccii.co.za/deployment/face_of_war.html. Last accessed on July 28, 2004. See also “Cooperative Engagement Successfully Demonstrated at Sea,” US DoD News Release, March 6, 2001. Available at http://www.defenselink.mil/releases/2001/b03062001_bt097-01.html. Last accessed on July 28, 2004.
 - 56 Vice Admiral Arthur K. Cebrowski, US Navy and John J. Garstka, “Network-Centric Warfare: Its Origin and Future,” *Proceedings*, Naval Institute Magazine, 124: 1 (January 1998), pp. 28–35. Available at <http://www.usni.org/Proceedings/Articles98/PROcebwski.htm>. Last accessed on July 28, 2004.
 - 57 Hazlett, “Just-in-Time Warfare,” in *Dominant Battlespace Knowledge*, pp. 115–16. The just-in-time warfare concept is derived from a Japanese management philosophy applied in manufacturing and production systems. Essentially, it involves having the right items with the right quality and quantity in the right place at the right time, which was developed and perfected within the Toyota manufacturing plants by Taiichi Ohno in the early 1970s Taiichi Ono, *Toyota Production System – Beyond Large Scale Production*, (University Park, IL: Productivity Press, 1988).
 - 58 John Arquilla and David Ronfeldt, *Swarming and the Future of Conflict*, DB-311-OSD, (Santa Monica, CA: RAND Publications, 2000), p. 5 (of PDF). Available at <http://www.rand.org/publications/DB/DB311/>. Last accessed on July 28, 2004.
 - 59 Ibid., p. viii.
 - 60 It is interesting to note that the concept of swarming is not a new concept in the sense that the natural world seems to abound with examples of swarming. Thus, the futuristic picture described is gained from an observation of a swarm of bees. Other examples, such as the behavior displayed by piranhas, fire ants, and fire flies, are equally applicable. Examples of swarming are also present in early examples of war, such as those exhibited by the Mongols in the early thirteenth century. For an extended discussion of swarming in the context of NCW, see Arquilla and Ronfeldt, *Swarming and the Future of Conflict*. See also H. Van Dyke Parunak, “Making Swarming Happen,” Alturum Institute, Paper Presented on the Conference on Swarming and C4ISR, Tyson’s Corner, VA. January 2003. Available at <http://www.irim.org/~vparunak/MSH03.pdf>. Last accessed on July 28, 2004. See also Sean J. A. Edwards, *Swarming on the Battlefield: Past, Present, and Future*, MR-1100-OSD, (Santa Monica, CA: RAND Publications, 2000). Available at <http://www.rand.org/publications/MR/MRI100/>. Last accessed on July 28, 2004.
 - 61 Noah Shachtman, “Revenge of the Killer Drones,” in *Wired*, April 1, 2004. Available

- at <http://www.wired.com/news/technology/0,1282,62893,00.html>. Last accessed on July 28, 2004. See also US Office of Naval Research, Science & Technology – Human Systems, “Biorobotics.” Available at http://www.onr.navy.mil/sci_tech/personnel/342/ne_biorobotics.asp. Last accessed on July 28, 2004. See also Frieditis *et al.*, *Smartswarms: Distributed UAVs that Think*, Lookahead Decisions Inc., Power of Information Age Concepts, 2004 Command and Control Research Technology Symposium, San Diego, CA. See also Peter Singer’s *Wired for War: The Robotics Revolution and Conflict in the 21st Century*, (New York: Penguin Publishers, 2009).
- 62 “Machinic,” a term originally coined by Gilles Deleuze, refers to the overall set of self-organizing processes in the universe. See G. Deleuze and F. Guattari, *A Thousand Plateaus – Capitalism and Schizophrenia*, Trans. Brian Massumi, (London: Continuum, 2003), pp. 88–90. In the context of this study, “machinic” refers to the Deleuzian concept and includes, but is not limited to, the fusion of the human and the machine, which is popularly known by the label of “cyborg.” I have opted for machinic over cyborg, as it captures the composite processes and natures of swarm units.
- 63 In this connection, it worth recalling Licklider’s original formulation as presented in his landmark paper “Man-Machine Symbiosis” (March 1960). In it, Licklider had presciently noted: “The hope is that in not too many years, human brains and computing machines will be coupled . . . tightly, and that the resulting partnership will think as no human brain has ever thought . . .” See J. C. R. Licklider, “The Computer as a Communication Device” and “Man Computer Symbiosis,” in *In Memoriam: J. C. R. Licklider 1915–1990*, (Palo Alto, CA: Systems Research Center), August 1990. Available at <ftp://gatekeeper.research.compaq.com/pub/DEC/SRC/research-reports/SRC-061.pdf>. Last accessed on July 28, 2004. Also quoted in K. Hafner and M. Lyon, *Where Wizards Stay Up Late – The Origins of the Internet*, (New York, NY: Touchstone Books, 1998), p. 35.
- 64 See Edwards, *Swarming on the Battlefield: Past, Present, and Future*, pp. 65–85. Edwards identifies the US Army’s Force XXI and the AAN (Army After Next) as relevant examples.
- 65 Arquilla and Ronfeldt, *Swarming and the Future of Conflict*, pp. 70–72.
- 66 Alberts, Garstka, and Stein, *Network-Centric Warfare – Developing and Leveraging Information Superiority*, p. 75.
- 67 Recall in this context the *Auftragstaktik* practiced by the German army in the two World Wars. In today’s context, the Israeli military uses these methods, albeit within the limits and constraints of available and deployable technologies. See Alberts, Garstka, Hayes, Signori, *Understanding Information Age Warfare*, p. 171.
- 68 Hazlett, “Just-in-Time Warfare,” in *Dominant Battlespace Knowledge*, pp. 115–16.
- 69 Samantha L. Quigley, “Transformation Chief Outlines Strategy for New Battlefield,” American Forces Press Service, August 05, 2004. Available at http://www.defenselink.mil/news/Aug2004/n08052004_2004080504.html. Last accessed on August 6, 2004. In the article, Admiral Cebrowski notes the inverted relationship between the “strategically offensive” and “operationally defensive” force-posturing required for the “new” battlefield. It is interesting to see that if a force is “strategically offensive” in orientation then its ability to be “operationally defensive” is open to question. Moreover, being “strategically offensive” in orientation resonates loudly with the idea of a force that is in a “virtual” state of war.
- 70 Alberts, Garstka, and Stein, *Network-Centric Warfare – Developing and Leveraging Information Superiority*, p. 84.
- 71 Libicki, *The Mesh and the Net – Speculations on Armed Conflict in a Time of Free Silicon*, p. 129. Libicki, in this context, refers to the “universal translatability” that the impact of ICTs are having and will have in the future. It is interesting to note that the concept of “universal translatability” as applicable to machine-to-machine interactions is as it is to human-to-machine and human-to-human interaction, facilitated by a mesh of networks. See also Vice Admiral Arthur K. Cebrowski (Rtd.), U.S. Navy, and John

- J. Garstka, "Network-Centric Warfare: Its Origin and Future." Admiral Cebrowski writes: "at the planning level, the elements of a DoD-wide intranet are emerging. To assure interoperability, all elements of the Grids must be compliant with the Joint Technical Architecture and the Defense Information Infrastructure common operating environment. However, their full integration into a more powerful warfighting ecosystem is only partially complete." The admiral cites the CEC as the primary example of such activities.
- 72 See, for example McDonald Bradley, Inc., "The Semantic Web Foundations of Net-Centric Warfare," White Paper, January 2003. Available at <http://www.mcdonald-bradley.com/comps/white%20papers/The%20Semantic%20Web%20Foundations%20of%20Net-Centric%20Warfare.pdf>. Last accessed on July 28, 2004.
 - 73 Libicki, *The Mesh and the Net – Speculations on Armed Conflict in a Time of Free Silicon*, pp. 30–31
 - 74 Reza Negarestani provides us with an excellent and sophisticated account of some of the ways by which this evasion may take place. See Reza Negarestani, *Cyclonopedia: Complicity with Anonymous Materials*, (Melbourne: re. Press, 2008), pp. 123–28.
 - 75 See Jain *et al.*, "Biometrics – A Grand Challenge," to appear in *Proceedings of International Conference on Pattern Recognition*, Cambridge, August 2004. Available at: http://biometrics.cse.msu.edu/Publications/GeneralBiometrics/Jainetal_BiometricsGrandChallenge_ICPR04.pdf. Last accessed on August 11, 2004.
 - 76 Edward A. Smith, *Effects Based Operations – Applying Network Centric Warfare in Peace, Crisis, an, War*, Information Age Transformation Series, (Washington, DC: US DoD, CCRP, 2003), p. 108.
 - 77 Personal discussion and exchange of emails with Prof. Michael Dillon, Lancaster University, August 4, 2004.
 - 78 Admiral Cebrowski's formulation in this context is instructive. He makes the point that being disconnected is to be in danger. Note how this formulation works both ways – in terms of securing from danger *and* interdicting the source of such a danger. See Speech to Network Centric Warfare 2003 Conference, January 22, 2003. Available at http://www.oft.osd.mil/library/library_files/speech_143_CEBROWSKI%20SPEECH%20TO%20NETWORK%20CENTRIC%20WARFARE%20CONFERENCE.doc. Last accessed on July 28, 2004.
 - 79 Alberts, Garstka, Hayes, and Signori, *Understanding Information Age Warfare*, p. 285.
 - 80 Manuel de Landa, *War in the Age of Intelligent Machines*, (New York: Zone Books, 1991), p. 5.
 - 81 See, for example, Howard Rheingold, *Smart Mobs: The Next Social Revolution*, (New York: Basic Books, 2003) and his *Virtual Reality: The Revolutionary Technology of Computer-Generated Artificial Worlds – and How It Promises to Transform Society*, (New York: Simon & Schuster, 1992). See also Sherry Turkle, *Life on the Screen: Identity in the Age of the Internet*, (New York: Simon & Schuster, 1997).
 - 82 Manuel Castells, *The Rise of the Network Society, The Information Age: Economy, Society and Culture Vol. I*, (Oxford: Blackwell Publishers, 1996), pp. 469–78.
 - 83 Libicki, *The Mesh and the Net – Speculations on Armed Conflict in a Time of Free Silicon*, p. 11. Libicki notes how the impact of the information revolution has "rendered large chunks of the West's workspace unrecognizable." Re-territorialization is a concept deployed by Gilles Deleuze. See Deleuze and Guattari, *A Thousand Plateaus – Capitalism and Schizophrenia*, pp. 142–45.
 - 84 *Ibid.*, p. 126.
 - 85 See McDonald Bradley, Inc., "The Semantic Web Foundations of Net-Centric Warfare."
 - 86 Martin Libicki, *The Mesh and the Net – Speculations on Armed Conflict in a Time of Free Silicon*, p. 126.
 - 87 Michael Dillon, "Network Society, Network-Centric Warfare and the State of Emergency," in *Theory, Culture and Society*, 2002, 19 (4), pp. 71–79.

- 88 Alberts, Garstka, and Stein, *Network-Centric Warfare – Developing and Leveraging Information Superiority*, p. 8.
- 89 For example, see DARPA, “Human Assisted Neural Devices’ Program.” “The program will create new technologies for augmenting human performance through the ability to noninvasively access codes in the brain in real time and integrate them into peripheral device or system operations.” Available at <http://www.darpa.mil/dso/thrust/biosci/brainmi.htm>. Last accessed on July 28, 2004.
- 90 See Thomas K. Adams, “Future Warfare and the Decline of Human Decision-Making,” *Parameters*, US Army War College Quarterly, Winter 2001–2, pp. 57–71. Available at <http://carlisle-www.army.mil/usawc/Parameters/01winter/adams.htm>. Last accessed on July 28, 2004. Adams writes: “We are faced with the prospect of equipment that not only does not require soldiers to operate it, but may be defeated if humans do attempt to exert control in any direct way.” Under such, admittedly futuristic circumstances, one wonders what element of “networking,” as a conscious and planned activity, would survive.
- 91 Dillon, “Network Society, Network-Centric Warfare and the State of Emergency,” pp. 71–79.
- 92 Noel Schachtman, “Big Brother Gets a Brain – The Pentagon’s Plan for Tracking Everything that Moves.”
- 93 Deleuze, *Negotiations*, pp. 177–82.
- 94 Juliette Simont, “Intensity, or: the ‘Encounter,’” in Jean Khalfa, ed., *An Introduction to the Philosophy of Gilles Deleuze*, (London: Continuum, 2003), p. 32.
- 95 Barry Watts, *Clausewitzian Friction and Future War*, McNair Paper Number 52 (Revised), October 1996. Available at <http://www.ndu.edu/inss/McNair/mcnair52/m52cont.html>. Last accessed on May 19, 2007.
- 96 Alan Beyerchen, “Clausewitz, Nonlinearity, and the Unpredictability of War,” *International Security*, 17 (3) (Winter, 1992), pp. 59–90.
- 97 Clausewitz, *On War*, pp. 85–86.
- 98 Beyerchen, “Clausewitz, Nonlinearity and the Unpredictability of War,” pp. 59–90.
- 99 Ibid.
- 100 One of the principle accusations levied against Jomini was his consideration of war as a giant chess game. As the following discussion will show, the same may also be said of Clausewitz.
- 101 Safranski, in his philosophical biography on Nietzsche suggests that “[d]uring his final weeks in Turin, however, . . . [Nietzsche] shed the inhibitions that are necessary even for games . . . This lack of restraint could no longer be considered a ‘game,’ because the player had forfeited his sovereignty.” See Rudiger Safranski, *Nietzsche: A Philosophical Biography*, Trans. Shelley Frisch, (London: Granta Books, 2002), p. 309.
- 102 Clausewitz, *On War*, pp. 485–95; pp. 595–96. See also Antulio J. Echevarria II, “Clausewitz’s Center of Gravity: Changing our Warfighting Doctrine – Again!” (Carlisle, PA: Strategic Studies Institute, US Army War College, September, 2002). Available at <http://www.iwar.org.uk/military/resources/cog/gravity.pdf>. Last accessed on April 23, 2006.
- 103 Clausewitz, *On War*, p. 495.
- 104 Ibid.
- 105 “In Defence of the Heartland: Sir Halford Mackinder and His Critics a Hundred Years On,” Colin S. Gray, *Comparative Strategy* 23 (1) January/February/March 2004; Halford J. Mackinder, *Democratic Ideals and Reality*, (New York: Norton and Co., 1962); N. J. Spykman, *The Geography of Peace*, (New York: Harcourt Brace, 1944); David J. Lonsdale, “Information Power: Strategy, Geopolitics and the Fifth Dimension,” *Journal of Strategic Studies* 22(2–3) (1999), pp. 137–57; Geoffrey Sloan, “Sir Halford Mackinder: The Heartland Theory Then and Now,” *Journal of Strategic Studies* 22 (2–3) (1999), pp. 15–37.

- 106 Deleuze and Guattari, *A Thousand Plateaus – Capitalism and Schizophrenia*, pp. 361–74
- 107 Dillon in “Intelligence Incarnate: Martial Corporeality in the Digital Age” explains this well.
- 108 Libicki, *The Mesh and the Net – Speculations on Armed Conflict in a Time of Free Silicon*, pp. 30–31.
- 109 Here entropy is used in its most general of understandings as an inherent tendency towards the dissipation of useful energy. See, for example, Eric Dressler, *Engines of Creation: The Coming Era of Nanotechnology*, (New York: Anchor Books, 1987). See also Jeremy Rifkin and Ted Howard, *Entropy: A New World View*, (New York: Viking Press, 1980).
- 110 Michael Hardt and Antonio Negri, *Multitude: War and Democracy in the Age of Empire*, (London: Penguin Books, 2005), pp. 52–62.
- 111 As we have seen, the US Dept. Of Defence’s Office of Force Transformation is a prime example by which such a transformation is being effected and this transformation is not simply limited to a distinct martial domain. As Admiral Cebrowski and the other NCW theorists have repeatedly stressed, this transformation rides on the back of the proliferating digital dependency structures that are far in excess of mere martial domains.
- 112 Deleuze and Guattari, *A Thousand Plateaus – Capitalism and Schizophrenia*, p. 421.
- 113 Deleuze and Guattari, disappointingly, seem to draw such a conclusion. See Deleuze and Guattari, *A Thousand Plateaus – Capitalism and Schizophrenia*, p. 422.
- 114 The argument that NCW is simply a technological face of Clausewitzian War is an oft repeated refrain in the domain of military studies. See, for example, Colin S. Gray, *Another Bloody Century: Future War*, (London: Weidenfeld & Nicholson, 2005). See also David J. Lonsdale, *The Nature of War in the Information Age*, (London: Frank Cass, 2006).
- 115 In this connection Virillio’s account of speed and war is interesting. See P. Virillio and S. Lotringer, *Pure War*, Trans. Polizzoti, (New York: Semiotext(e), 1997).

5 Concept-war

- 1 Keith Ansell Pearson, “Viroid Life: On Machines, Technics and Evolution,” in Keith Ansell Pearson, ed., *Deleuze and Philosophy: The Difference Engineer*, (London: Routledge, 1977), p. 180.
- 2 Ibid., p. 181.
- 3 Ibid.
- 4 Christopher Coker, *The Future of War – The Re-Enchantment of War in the Twenty-First Century*, (Oxford: Blackwell Publishing, 2004), p. x.
- 5 Ansell Pearson, “Viroid Life: On Machines, Technics and Evolution,” pp. 181, 182.
- 6 Ibid., p. 182.
- 7 US Army Natick Soldier RD&E Center, “Future Soldier Initiative.” Available at <http://nsrdec.natick.army.mil/index.htm>. Last accessed on May 27, 2007. See also Maj. Gen. Lester Martinez-Lopez, “Biotechnology Enablers for the Soldier System of Systems,” *The Bridge* (The National Academy of Engineering) 34 (3) Fall 2004. Available at <http://www.nae.edu/NAE/bridgecom.nsf/weblinks/MKEZ-65RJZV?OpenDocument>. Last accessed on May 29, 2007. Note also that the Indian Chief of Army Staff, General J. J. Singh’s recent interview is evidence that thinking in these terms is not simply the preserve of the technologically advanced US military. Among other things, Gen. Singh noted: “As in civilian and other sectors, we would like to make optimal use of ICT (information and communication technology) for which Indian tech firms are known worldwide. We will be investing substantially to make our operations—from war zones to civil lines—digital, with seamless connectivity for online access to information systems.” See “Indian Army To Invest In F-INSAS (Future

- Infantry Soldier as a System) Programme" (4/6/2007). Available at <http://www.india-defence.com/reports-3269>. Last accessed on June 04, 2007.
- 8 Michel Foucault, *Discipline and Punish – The Birth of the Prison*, Trans. A. Sheridan (London: Penguin Books, 1991), pp. 135–230.
 - 9 Ansell Pearson, "ViroidLife: On Machines, Technics and Evolution," p. 181.
 - 10 Ibid.
 - 11 Ibid., p. 3.
 - 12 Ibid., p. 4.
 - 13 Deleuze Guattari, *What is Philosophy?* p. 2.
 - 14 Ibid.
 - 15 See Constantin V. Boundas, "Ontology," in Adrian Parr, ed., *The Deleuze Dictionary*, (Edinburgh: Edinburgh University Press, 2005), pp. 191–92.
 - 16 Cliff Stagoll, "Becoming," in Adrian Parr, ed., *The Deleuze Dictionary*, (Edinburgh: Edinburgh University Press, 2005), p. 21.
 - 17 Boundas, "Ontology," in *The Deleuze Dictionary*, pp. 191–92.
 - 18 "Concepts," in the Deleuzian context, carry a somewhat different connotation. Thus, while "becoming" and "difference" may be viably considered as "concepts," we should also bear in mind the cautionary note that Boundas strikes. He states: "concepts are not processes." See Constantin V. Boundas, "What Difference does Deleuze's Difference Make?" in Constantin V. Boundas, ed., *Deleuze and Philosophy*, (Edinburgh: University of Edinburgh Press, 2006), p. 4.
 - 19 Claire Colebrook, "Introduction," in Adrian Parr, ed., *The Deleuze Dictionary*, (Edinburgh: Edinburgh University Press, 2005), p. 5.
 - 20 Ibid., p. 5. Emphasis in original.
 - 21 Felicity J. Coleman, "Rhizome," in *The Deleuze Dictionary*, p. 231.
 - 22 G. Deleuze and F. Guattari, *A Thousand Plateaus – Capitalism and Schizophrenia*, Trans. Brian Massumi, (London: Continuum, 2003), p. 11.
 - 23 G. Deleuze and F. Guattari, *What is Philosophy?*, Trans. Hugh Tomlinson and Graham Burchell, (New York: Columbia University Press, 1994), p. 35.
 - 24 Ibid.
 - 25 Ibid., p. 36.
 - 26 Deleuze and Guattari, *A Thousand Plateaus – Capitalism and Schizophrenia*, p. 313.
 - 27 M. Bonta and J. Protevi, *Deleuze and Geophilosophy*, (Edinburgh: Edinburgh University Press, 2004), p. 124. It is important to note that though Deleuze and Guattari do suggest that the plane of immanence is also a plane of consistency, it is not, as Bonta and Protevi suggest, an experimental field—experimental in the sense that it is the plane where immanent and horizontal relationship may be constructed. This is inaccurate because (1) the plane of immanence is not a field per se, and (2) experimentation is not an activity that is possible with/in the plane of immanence due to its intrinsic immanent nature. See Deleuze and Guattari, *What is Philosophy?*, pp. 35–60.
 - 28 Deleuze and Guattari, *What is Philosophy?*, p. 38.
 - 29 Alberto Toscano, "Chaos," in *The Deleuze Dictionary*, p. 43.
 - 30 Ibid.
 - 31 Coleman, "Rhizome," in *The Deleuze Dictionary*, p. 232.
 - 32 Thus, for example, it is stated that "Each concept in the top-level is described by a set of attributes and metrics at the second level. The attributes measure characteristics of the concept in terms of quantity (how much? how often? how long? etc.) and quality (how correct? how appropriate? how complete? etc.). Each attribute is actually measured by a metric (or set of metrics) that specifies in detail what data would be needed to measure the attribute. See, Evidence Based Research, Inc, *Network Centric Operations Conceptual Framework* (Version 1.0), Prepared for John Garstka, Office of Force Transformation, (Vienna, VA: Evidence Based Research, Inc, November 2003), p. 6 (of PDF file). Available at <http://www.iwar.org.uk/rna/resources/ncw/ncw-conceptual-framework.pdf>. Last accessed on July 11, 2007.

- 33 This much is obvious from the NCW and Force Transformation literature. See, for example, Tom Hone, Asst. Director Office of Force Transformation, "Understanding Transformation," in *Transformation Trends*, Office of Force Transformation, US Department of Defense, January 16, 2004. Available at <http://www.iwar.org.uk/rna/resources/transformation/understanding-transformation.pdf>. Last accessed on January 3, 2008.
- 34 Stagoll, "Plane," in *The Deleuze Dictionary*, p. 204.
- 35 Deleuze and Guattari, *A Thousand Plateaus – Capitalism and Schizophrenia*, p. 313.
- 36 Ibid.
- 37 Ibid., p. 314.
- 38 Note that by asserting this, this study is contesting the claim made by Deleuze and Guattari that even chaos has a directional tendency. See *ibid.*, p. 13.
- 39 Ibid., p. 315. Emphasis in original.
- 40 Ibid., p. 313.
- 41 Bonta and Protevi, *Deleuze and Geophilosophy: A Guide and Glossary*, p. 54.
- 42 Ibid., p. 32.
- 43 Ibid., p. 16.
- 44 Deleuze and Guattari, *A Thousand Plateaus – Capitalism and Schizophrenia*, p. 335.
- 45 Ibid., p. 328.
- 46 Ibid., pp. 328–29.
- 47 Ibid., p. 329.
- 48 J. Arquilla and D. Ronfeldt, *Swarming and the Future of Conflict*, DB-311-OSD, (Santa Monica, CA: RAND Publications, 2000), p. vii (of PDF version). Available at <http://www.rand.org/publications/DB/DB311/>. Last accessed on July 28, 2004.
- 49 Ibid., p. 22 (of PDF version).
- 50 Sean Edwards, *Swarming on the Battlefield: Past, Present, and Future*, MR-1100-OSD, (Santa Monica, CA: RAND Publications, 2000), p. 66. Available at <http://www.rand.org/publications/MR/MR1100/>. Last accessed on July 28, 2004.
- 51 Bonta and Protevi, *Deleuze and Geophilosophy: A Guide and Glossary*, p. 52.
- 52 Ibid., p. 52. See also Deleuze and Guattari, *A Thousand Plateaus – Capitalism and Schizophrenia*, pp. 310–50.
- 53 Deleuze and Guattari, *A Thousand Plateaus – Capitalism and Schizophrenia*, p. 360.
- 54 Ibid.
- 55 Ibid., p. 359.
- 56 Ibid.
- 57 See Georges Dumézil, *Mitra-Varuna: An Essay on Two Indo-European Representations of Sovereignty*, Trans. Derek Coltman, (New York: Zone Books, 1990)
- 58 Deleuze and Guattari, *A Thousand Plateaus – Capitalism and Schizophrenia*, p. 352.
- 59 Ibid. Emphasis in original.
- 60 Ibid.
- 61 Ibid. Emphasis in original.
- 62 Ibid.
- 63 Ibid. Recall in this context the original question posed by this study: What if the relation of war to the political is like that of the uncircumscribed to the field of its circumscription? See introduction.
- 64 Online Etymology Dictionary – available at <http://www.etymonline.com/index.php?search=stratum&searchmode=none>
- 65 Online Etymology Dictionary – available at <http://www.etymonline.com/index.php?search=stratum&searchmode=none>
- 66 Deleuze and Guattari, *A Thousand Plateaus – Capitalism and Schizophrenia*, p. 421.
- 67 In this context, one is immediately reminded of the *Einsatzgruppen* that followed the *Wehrmacht* into battle, particularly on the Eastern Front. As the "military war" was being waged on the edges of the frontlines by the *Wehrmacht*, in the rearward areas, the

- Einsatzgruppen* was engaged in what was, more often than not, the grisly task of striating the smooth space that had been produced by the military power of the Wehrmacht. See, for example, Christopher R. Browning, *Ordinary Men: Reserve Police Battalion 101 and the Final Solution in Poland*, (New York: Harper Perennial, 1998). For an equally graphic but partisan and ultimately skewed account see, Daniel Jonah Goldhagen, *Hitler's Willing Executioners: Ordinary Germans and the Holocaust*, (New York: Vintage Books, 1997).
- 68 See, for example, Michel Foucault's *Society Must Be Defended*, – Lectures at the Collège de France 1975–76, Ed. M. Bertani and A. Fontana, Trans. David Macy, (London: Allen Lane, 2003); and *Security, Territory and Population*, – Lectures at the Collège de France 1977–78, Ed. Michel Senellart, Trans. Graham Burchell, (London: Palgrave Macmillan, 2007).
- 69 Deleuze and Guattari, *A Thousand Plateaus – Capitalism and Schizophrenia*, p. 352.
- 70 Recall in this context that it was Michel Foucault who alerted us to the disciplining power of the State. Deleuze also alludes to this, though he updates Foucault's insight, by referring to the emergence of "control societies." See Gilles Deleuze, "Postscript to the Societies of Control." This essay first appeared in *L'Autre Journal* I (May 1990). Available at <http://www.watsoninstitute.org/infopeace/vy2k/deleuze-societies.cfm>. Last accessed on January 19, 2008.
- 71 Julian Reid, "Deleuze's War Machine: Nomadism against the State," *Millennium: Journal of International Studies*, February 2003, 32 (1), pp. 57–85. See also Georges Dumézil, *The Destiny of the Warrior*, (Chicago and London: University of Chicago Press, 1969). See also Deleuze and Guattari, *A Thousand Plateaus – Capitalism and Schizophrenia*, pp. 351–54.
- 72 Deleuze and Guattari, *A Thousand Plateaus – Capitalism and Schizophrenia*, p. 418.
- 73 Ibid., p. 230.
- 74 Ibid., p. 418.
- 75 Nick Land, *The Thirst for Annihilation – George Bataille and Virulent Nihilism*, (London: Routledge, 1992), p. 130.
- 76 G. Deleuze, *Pure Immanence: Essays on A Life*, Trans. Anne Boyman, Intro. John Rajchman, (New York: Zone Books, 2001), p. 29.
- 77 *Srimad-Bhagavad-Gita*, Trans. Swami Swarupanada, (Mayawati, India: Advaita Ashrama, 1998), Chap II, #28, p. 45.
- 78 Ibid., Chap II, #20, p. 40.
- 79 But as we will see, this potentiality remains a potentiality and is never realized/actualized.
- 80 See Emmanuel Levinas, *On Escape (De l'évasion)*, Intro. and Annotated Jaques Rolland, Trans. Bettina Bergo, (Stanford, CA: Stanford University Press, 2003), p. 54. See also p. 115 en, 4.
- 81 John Mullarkey, *Post-Continental Philosophy: An Outline*, (London: Continuum, 2006), p. 143.
- 82 Ibid.
- 83 Ibid.
- 84 Ibid., p. 144.
- 85 Ibid., p. 8. Emphasis in original.
- 86 Ibid., p. 145. Emphasis and parenthesis in original.
- 87 Ibid., p. 144.
- 88 Ibid. Mullarkey advises us that for Laruelle, "non-philosophy" has no desire or passion for the Real, it simply thinks according to the Real.
- 89 *Srimad-Bhagavad-Gita*, Chapter XI, #10, 11, 13, pp. 246–47.
- 90 Mullarkey, *Post-Continental Philosophy: An Outline*, p. 145.
- 91 Ibid.
- 92 Ibid. Emphasis in original.

- 93 See Stephen Biddle, *Military Power – Explaining Victory and Defeat in Modern Battle*, (Princeton: Princeton University Press, 2006), pp. 1–13.
- 94 *Srimad-Bhagavad-Gita*, Chapter XI, #7, p. 244.
- 95 Ibid., Chapter XI, #16, p. 249.
- 96 Ibid., Chapter II, #19, p. 39.
- 97 Ibid., Chapter II, #20, pp. 335–36.
- 98 Ibid., Chapter XI, # 7, p. 244.
- 99 Ibid., Chap XI, #16, p. 249.
- 100 Ibid., Chap VIII, #18, p. 18. Parenthesis in original.
- 101 Ibid., Chap IX, #32, p. 259.
- 102 *Bhagavad-Gita*, Chapter I, # 32–34, p. 19.
- 103 Ibid., Chapter I, # 35, p. 20.
- 104 Ibid., Chapter I, # 46, p. 25.
- 105 Ibid., Chapter I, # 36, p. 20.
- 106 Ibid., Chapter I, # 11, p. 34.
- 107 Ibid., Chapter II, # 12, p. 35.
- 108 Ibid., Chapter II, # 14, p. 36.
- 109 Ibid., Chapter VI, #20–39, pp. 374–83.
- 110 Ibid., Chapter XII, #30, p. 305.

Conclusion

- 1 Jonathan Israel, *Enlightenment Contested: Philosophy, Modernity, and the Emancipation of Man, 1670–1752*, (New York: Oxford University Press, 2008), p. 5.
- 2 Immanuel Kant, *Critique of Pure Reason*, Trans. Werner S. Pluhar, Intro. Patricia W. Kitcher, (Indianapolis: Hackett Publishing Co., 1996), pp. 757–58. Emphasis in original.
- 3 Gilles Deleuze, *Kant's Critical Philosophy*, Trans. Hugh Tomlinson and Barbara Habberjam, (Minneapolis: University of Minnesota Press, 2003), p. 1.
- 4 See, for example, Martin Libicki, *Standards – The Rough Road to the Common Byte*, The Center For Advanced Concepts and Technologies, (Washington, DC: National Defense University, 1995).
- 5 Ian Buchanan, "Treatise on Militarism," in Ian Buchanan and Adrian Parr, eds, *Deleuze and the Contemporary World*, (Edinburgh: Edinburgh University Press, 2006), p. 31.
- 6 G. Deleuze and F. Guattari, *A Thousand Plateaus – Capitalism and Schizophrenia*, Trans. Brian Massumi, (London: Continuum, 2003), p. 421.
- 7 In Deleuze and Guattari's terms, this is when the war machine eludes the capture of the State-apparatus and makes the state just one of its moving parts. For a fuller discussion of this, see Ian Buchanan, "Treatise on Militarism," pp. 21–41.
- 8 Antoine Bousquet, *The Scientific Way of Warfare: Order and Chaos on the Battlefields of Modernity*, (London, UK: Hurst Publishers, 2009), pp. 238–39. My emphasis.
- 9 Ibid., p. 240.
- 10 Claire Colebrook, "Introduction" in Adrian Parr, ed., *The Deleuze Dictionary*, (Edinburgh: Edinburgh University Press, 2005), p. 5.
- 11 John Mullarkey, *Post-Continental Philosophy: An Outline*, (London: Continuum, 2006), p. 145.
- 12 Ibid., p. 193.
- 13 Ibid.

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Index

- absolute immanence 59–60
Absolute War 50–56, 57–60, 82, 85, 127,
131–132, 134, 169, 170
Advanced Research Projects Agency
(ARPA) 87–88, 101
air warfare 89
AirLand Battle Doctrine 119–120
apparatuses 148–149, 160, 164;
emergence of 146, 156; State 148–156,
165–166
ARPANET 101–102, 103
Arquilla, J. 3–4
assemblages 125, 145–148, 155–156, 158,
160, 166, 171–172
- Baran, Paul 101, 102–103, 104, 106,
108–109, 125
battlespace 4–5, 89, 143–145; CEC 119;
information management 105–106;
multiple entities 106–107;
reconfiguration of 113
“battleswarms” 119–120, 121, 147–148
Beyerchen, Alan D. 66, 127–128
Bhagavad-Gita 16, 157, 160–164, 166,
171, 173
“blind natural force” 50, 51–52, 57, 59,
127, 130
Bousquet, Antoine 171–172
Boyd, Col. John 100–101
- Cartesian Self 18–19, 32, 40–41, 42,
168
causality 69, 70
Cebrowski, Admiral Arthur 5, 6, 96, 97,
109, 131, 139, 140–141
center of gravity 128–129
chance 50, 57, 59, 60–72, 74, 84–85, 144;
Absolute War 53–56; Genius 78–79,
82, 84; grid of intelligibility 129;
mitigated by Reason 127; NCW 108,
130, 134–135, 138, 144–145, 170
change 115–116
chaos 71, 84, 85, 88, 98, 142, 160
chess 127–130
Clausewitz, Carl von 2–3, 7, 42–44,
126–129, 165, 169–170; chance and
uncertainty 59, 60–72, 78, 83–85,
134–135, 144; complexity 88, 99;
concept of war 50–56; Genius 78–84,
85, 130; method 44–46; “non-human
forces” 133; politics 57–59, 134;
strategy 48–50, 115; theory 45, 46–48,
72, 77–78
Clausewitzian theory of war 15, 36–37,
42–85, 86–87, 108, 126–129, 168,
170–171
Command and Control (C2) 95, 104–106,
111, 116–117, 119, 124
common operational picture (COP) 95, 96,
97, 120, 121, 122, 139, 141
complex adaptive systems 98–99, 103,
113, 114, 117, 123, 125
complexity 88, 97–101, 112, 124
confrontation 12–13
consistency 145–147
Cooperative Engagement Capability (CEC)
118–119, 120–121, 122, 139
critical analysis 77–78
- Davis, Victor Hanson 7–8
de Saxe, Maurice 24
decentralization 102–103, 105, 117, 119,
124
Deleuze, Gilles: absolute immanence
59–60; apparatuses 164; assemblages
145–146; “differential geometry” 12;
Genius 81–82, 84; Information Age 96;
on Kant 169; language 92; on

- Deleuze, Gilles (*cont.*):
 philosophy 136; plane of immanence 70, 71, 137–138, 141–142, 159–160; rhizomes 136–138, 140; “smooth space” 11; State 129, 148–154, 165–166; striation 10; war machines 16, 150, 151–152, 153–156, 167, 172–173
- Derrida, Jacques 91–92
- Descartes, René 18–19, 22, 38, 40, 41, 42, 127, 168–169
- digitization 3, 95, 116–117, 123, 170–171
- Dillon, Michael 92, 95–96, 122
- discipline 29, 30, 32, 38, 91
- discourse 90, 91, 92, 121, 122–123, 125, 126
- education 31, 36
- effects-based operations (EBOs) 119, 123, 143, 144
- emergence 145–146
- enframing 158–159, 165
- Enlightenment 7, 8, 18, 24, 37–38, 41, 126, 168; chance and uncertainty 78–79; Clausewitz 46, 55; disciplinary modes of thinking 40; education 31; Genius 79; geometry 25; grid of intelligibility 77
- excellence 132, 158, 165, 166
- fascism 154
- “fields of correspondence” 158, 159, 163, 164, 165–166
- Folard, Jean Charles, Chevalier 23–24
- Foucault, Michel 36–37, 59, 64–65, 73–77, 83, 97, 134; discipline 29–30, 32, 38; discourse 90; on Hobbes 39, 40; madness 90–92; power 125; State violence 152
- France 27, 28–29, 30, 32, 33, 72, 74
- Frederick the Great 25, 28, 32
- friction (*Frikction*) 8, 11, 54, 66, 68–71, 82–83, 84–85, 99, 127, 144
- full spectrum dominance 94, 116
- Gay, Peter 17–18
- genesis* 75–76, 77, 83, 88
- Genius 41, 72, 78–84, 85, 88, 169; chance and uncertainty 62, 69, 144; chess 130; as Commander 57, 61; de Saxe 24; Hugo 49; Jomini 34; Maizeroy 26; rules 46, 65
- geometry 12, 25
- German *Aufklärung* movement 30, 31–33
- German tactics 100
- government 73
- Grid, operational 118–119, 120–121
- grid of intelligibility 75–76, 77, 129, 130
- Grotius, Hugo 20–21, 168
- ground warfare 89
- Guattari, Félix: apparatuses 164; assemblages 145–146; language 92; on philosophy 136; plane of immanence 70, 71, 137–138, 141–142, 159–160; rhizomes 136–138, 140; “smooth space” 11; State 148–154, 165–166; war machines 16, 150, 151–152, 153–156, 167, 172–173
- Guibert, Jacques Antoine Hippolyte, Comte de 26–29, 30, 31, 63–64, 77
- Hacking, Ian 56, 62–63, 64–65, 66–67, 72–73, 74
- Heidegger, Martin 9–10, 12–13, 63, 165
- Herbig, Katherine L. 60–61
- Hobbes, Thomas 21, 22–23, 38–39, 40, 168
- immanence 72, 83–84, 85, 161; absolute 59–60; intensiveness of war 166; plane of 60, 70–71, 137–138, 141–143, 145, 156, 159–160
- infiltration tactics 100
- information 93–94, 95, 111; Command and Control 105–106; digitization 116–117; networks 107; OODA cycle 100–101; standardization 121–122; superiority 113–114, 116; threats 109
- Information Age 6–7, 9, 14, 169, 171; battlespace 113; capital 96; discursive practices 125; information revolution 3–4, 133; knowledge revolution 89; networks 112; technological developments 124
- Information and Communication Technologies (ICTs) 2, 3, 5, 9, 88, 94; chance and uncertainty 135; deployment in war 116, 124; digitization 95; economics of information 113; emergence of 124–125; networks 101–104; rise of 111, 112; ubiquity of 169
- instant-intensities 157–159, 164–165, 166, 167
- intelligence 80, 83
- intensiveness 12–13, 16, 132, 149, 157–159, 160, 166–167; assemblages 166; *Bhagavad-Gita* 161, 162, 164, 166; Clausewitzian theory of war 15; immanence 166; Sense and Evolve 14

- Internet 103–104, 112
- Jeter, K. W. 110
- Jomini, Baron Antoine Henri de 24,
34–37, 42, 64, 65–66, 72, 77, 168
- just-in-time warfare 119
- Kant, Immanuel 17, 43, 45, 57, 76, 88;
Genius 79, 81–82, 84; Reason 8–9, 42,
49, 56, 81, 169
- Krishna 160–4, 166
- language 92, 94, 123
- Laruelle, François 159, 160, 161, 164, 173
- law 20, 47–48, 73
- Leibniz, Gottfried Wilhelm 27, 67, 73–74
- levee en masse* 33
- Leviathan* (Hobbes) 23, 38–39
- Libicki, Martin 110–111, 122, 124, 131
- Licklider, Dr J. C. R. 101, 104, 110
- “lines of operation” 32–33, 34, 35, 64
- Lloyd, Henry Humphrey Evans 32, 34, 64,
72, 77
- logistics 10, 30, 32, 120; *see also* “lines of
operation”
- Lorenz, Edward 88, 99, 100, 114
- Machiavelli, N. 26–27
- machinic war 107–109; *see also* war
machines
- madness 90–92
- Maizeroy, Paul-Gedeon Joly de 25–26, 30,
63
- maneuvering 28, 29, 34–35, 100
- mathesis* 15, 25–26, 35, 40–41, 74–76, 77,
83, 88
- Metz, Steven 107–108, 109
- modernity 133
- Moltke, Helmuth Karl Benhard Graf von 10
- Mullarkey, John 159–160, 161, 173
- Napoleon Bonaparte 28, 30, 32–33, 35, 51,
52, 74
- national discipline 29, 30, 32, 33, 36
- nature 10, 22, 63
- naval warfare 89, 118
- Network-centric Warfare (NCW) 2, 3–9,
12, 15, 164–166; battlespace 143–145;
chance and uncertainty 62, 134–135,
138, 144–145, 170; Clausewitzian theory
of war 85, 108, 130–132; Command and
Control 104–106; conceptual
foundations 104, 110, 111; definition of
94; multiple battlespace entities
106–107; overview 89–90; “response”
9–11; rhizomes 138–141; semantic
implications 90–92; Sense and Evolve
14; strategy 115–124, 125–126;
technologization of discourse 93–97,
121, 122–123, 134; transformations 87,
88, 169–170; war machines 170
- networks 106–107, 108–109, 110, 111,
125–126; CEC 122; Command and
Control 117–118; concept of 114;
emergence of 101–104; equilibrium
123; juridical 152, 153; operational Grid
118, 119, 120–121; rhizomes 138
- Newton, Isaac 19, 27
- Nietzsche, Friedrich 11
- Nomad 154, 155, 156
- non-linearity 88, 97–101, 112, 113, 114,
124
- the norm 74–75
- Observation, Orientation, Decision, Action
(OODA) model 93, 95, 100–101, 119
- Office of Force Transformation (OFT) 74,
113–114
- operational Grid 118–119, 120–121
- order 74–75, 76, 77, 90
- the Other 40, 41
- peace 36
- Pearson, Ansell 3, 9, 133, 134, 135
- philosophy 136, 169
- plane of immanence 60, 70–71, 137–138,
141–143, 145, 156, 159–160
- planning 120
- Plato 18–19
- Poincaré, Jules-Henri 66, 67, 88
- polemos* 12–13
- police power 151–153, 154
- politics 36–37, 134; Clausewitz 43,
50–51, 57–59, 85; Revolution in Military
Affairs 108
- power 37, 38, 39, 91; Foucault 74, 125;
military/police 151–153, 154;
signification 96
- Prussia 25, 73, 74
- “pure concept of war” 53–54, 55–58, 69,
82, 83–84, 85, 134
- Puysegur, Marquis de 24–25, 30, 63, 77
- Quadrennial Defense Review* (QDR) 1, 2,
109, 134–135, 169
- RAND Corporation 101, 102
- rationalism 12, 18, 20, 64, 168

- Real War 50, 51, 53–55, 57, 82, 85, 134
Reason 17, 18, 30, 37, 38, 41, 168;
 Cartesian 19; chance and uncertainty
 61, 63; Clausewitz 45, 50, 53–58, 77,
 85, 127, 130, 169; concept of war 171;
 Foucault 91; Genius 84; Grotius 21;
 Hobbes 22, 23; Jomini 35; Kant 8–9,
 42, 49, 56, 81, 169; madness and 91–92;
 NCW 131–132; Romantic Age 49;
 Vattel 22
reconnaissance-strike complex (RSC) 93,
 111
religion 17, 44
“response” 9–11
Revolution in Military Affairs (RMA) 2,
 107–108
rhizomes 136–141, 145, 160
rhythm 142, 143
Romanticism 7, 46, 49, 55, 126
Ronfeldt, D. 3–4
Rumsfeld, Donald 5–6, 119, 131, 139, 170

science 20, 22, 36, 37, 42, 49, 75, 129
self-preservation 21, 22
self-synchronization 95, 103, 106
Sense and Evolve (SAE) 14
sensing-as-response 10–11
Seven Years War (1756–63) 25, 64
Shannon, Claude 101
“shared awareness” 10, 117
signification 96
silence 92
SIMNET 7
Singer, Peter 5
Smith, Roger 20
sovereignty 39, 73, 149–150
Soviet Union, former 93, 117–118
Sputnik 87
standardization 121–122
State 5, 73, 131, 148–156, 165–166; force-
 intensity 10; Jomini 35; modern
 concept of war 17; taming of chance
 129
“state of war” 39
statistics 72–74
strategy 26, 42, 115, 125–126; chess
 128–129; Clausewitz 48–50; Genius 80;
 global order of 116, 121–124; Jomini
 34, 35–36; local order of 116–121

“stratum” 151
supply chains 32; *see also* “lines of
 operation”
surveillance 115
“swarming” 119–120, 121, 147–148
system of systems (SOS) 93, 111

tactics 25–26, 27–28, 29–30, 63, 100,
 120–121
taxinomia 74–76, 77, 83, 88
technologization 8, 93–97, 121, 122–123,
 125, 126, 133–134; *see also* Information
 and Communication Technologies
tempo of operations 70, 71, 95, 97, 99,
 124, 143–144
terrorism 1, 2
Thanatos 15, 56, 132
Thirty Years’ War (1618–1648) 20–21
threats 1, 109, 112, 122, 123, 126, 147
transformation 5–6, 88, 90, 131, 136, 139,
 140–141, 169–170
Transformation Planning Guide (TPG)
 118
truth 91

uncertainty 1, 8, 60–72, 83–85, 116;
 Absolute War 53, 54; Clausewitz 144;
 Enlightenment theorists 78–79; Genius
 80, 82; grid of intelligibility 129;
 mitigated by Reason 127; NCW 108,
 130, 131, 134–135, 138, 144–145, 170;
 operational Grid 119; *see also* chance

value 96–97, 124–125, 126
Vattel, Emmerich de 21–22, 40, 50, 168
Vauban, sebastien Le Prestre de 25, 30
Vietnam War 95, 105, 111–112
von Bulow, Adam 32–33, 34, 64, 72, 77
von Nicolai, Ferdinand Friedrich 31–32
von Zanthier, Friedrich Wilhelm 31

war, definition of 50–51
war machines 82–83, 149–156, 166, 167,
 170, 172–173
“war of maneuver” 28, 29
Watts, Barry 64, 66, 127
weapons 89, 114, 147
“will to live” 39–40
wireless technology 107