



Primer
The Power of Will
In International
Conflict

Wayne Michael Hall, Ed.D.
Brigadier General
US Army, Retired

Figures and Tables

Figures

Figure 1. Why Should You Listen To These Words?	2
Figure 2. Intellection Foundation of <i>The Power of Will in International Conflict</i>	5
Figure 3. Exploring a Definition of <i>Will</i>	7
Figure 4. 14 Element Model of <i>Will</i>	9
Figure 5. Incursion and Cultural Rules	10
Figure 6. Talking With the Masters and Using Their Ideas	11
Figure 7. Select Discussion of the Book's Big Ideas	13
Figure 8. Essence of the Problem	16
Figure 9. Collision of <i>Wills</i>	17
Figure 10. Will's 14 Element Model	18
Figure 11. Riding the Wild Pendulum	20
Figure 12. Wargame the Adversary's Wargaming	23
Figure 13. Problem Set	25
Figure 14. Operational Context	32
Figure 15. Aggregations and Context	37
Figure 16. Role of Culture on Complex Adaptive Systems	45
Figure 17. The Importance of Sacrifice	57
Figure 18. The Centrality of Emotion	58
Figure 19. Thinking About the Adversary's Mind's Eye	63
Figure 20. Imagining the Mind's Eye	65
Figure 21. Thinking Like the Adversary Thinks	71
Figure 22. Thinking Model for Adaptive Adversaries	76
Figure 23. The Cells of Matrix War	81
Figure 24. The Basics of Matrix War Relationships	84
Figure 25. Relationships in Matrix War	88
Figure 26. Connectedness Among Centers of Gravity	88
Figure 27. Closing Thoughts	91

Tables

Table 1. The Adversary's View - 36 Element Strategic Thought Model	22
Table 2. 18 Characteristics of Nonlinearity	40
Table 3. Considerations of <i>Will</i>	53

Hall's Notes On Conflict, War, and *Will*
Wayne Michael Hall, Ed.D.
Brigadier General
US Army, Retired

THE POWER OF WILL
IN INTERNATIONAL CONFLICT
HOW TO THINK CRITICALLY
IN COMPLEX ENVIRONMENTS
WAYNE MICHAEL HALL

PRAEGER SECURITY INTERNATIONAL

5/30/20

In the author's words a brief explanation of some of the salient points of interest in the book.

1

Figure 1. Why Listen to These Words?

Greetings. My name is Wayne Michael Hall. You can call me Mike. I am the author of the book, *The Power of Will in International Conflict*. This missive is a primer, or a guide, to this book that I'll explain in a summary form. I'll also introduce you to some new ideas and thoughts that I've developed since 2018, the book's publishing date.

I want you to enjoy the book, and I ask you to put its ideas into use. With a thorough reading, I promise intellectual stimulation and growth. After reading and studying the book, your mind will be well-armed to win bouts of mental combat. As you read the book, a discovery seeps into your mind-this book suggests that conflict today involves thinking, knowledge, deception, disinformation, misinformation, and information superiority. I call it mental combat between foes over the dominance of *will*. In my view, we have to purposefully prepare our thought warriors' minds to wage this kind of conflict for the triumph of the *will*.

In this new age, mental combat rises to preeminence. It occurs within a war of wits. An overarching conflict contains both mental combat and wars of wits. And, *will* is the epicenter of any conflict. As such, it is the central idea of any conflict as without a struggle over conflicting *wills*, there would be no conflict. Now, I argue for the importance of imposing our *will* and thus winning fights that decide information superiority, knowledge superiority, and decision superiority, the quality of decisions, the quality of the thinking that goes into decisions, and dominance of *wills*. Each proves essential as they are inescapable aspects of conflict. Thus, we have to learn 'how to think' about achieving victory in struggles of *will* in the kinds of conflict you just read.

Will is the central idea of conflict. Physical fighting, still violent, still present, still dangerous, always looms, but its instruments prove too expensive and outcomes too perilous for settling WWII like contests of *will*. Even though large scale conventional warfare could occur, and America must prepare for it, all the while knowing that such conflict can only be sporadic and short lived. In consequence, physical combat between great powers will be sparse, even peripheral. In this primer, I want you to sense, dig, and unearth the presence and nature of ***mental combat occurring within wars of wits*** with both constituting the core of conflict in the constant quest for triumph of *will*. Mental combat and wars of wits have come forth as opponents do battle with one another to successfully imposing their *wills* on their opponents. We must be aggressive, do likewise, and win. But, as a prerequisite, we must learn 'how to think' about fighting over *will* from multiple approaches, angles, and sides of any kind of fray in any operational context.

My book helps people understand this great phenomenon-will. This primer introduces some of the ideas in my book of *will* and foreshadows the themes, definition, thought models, and concepts. In my view, good minds armed with a deep knowledge of *will* prove foremost in winning or losing in any conflict involving supremacy of *will*. When I say conflict, of course, I speak of a broad range of struggles involving the desire to win and favorably settling disagreements-in wars, corporate takeovers, courts of law, police and rioters, drug dealers vs. the Drug Enforcement Administration, parents vs. their children, spats between spouses.

As a first substantive step in this primer, I ask you to ponder a question. What do you know about this important phenomenon, *will*? I confess to my prior inattention to understand *will's* meaning. Until a few years ago, I had not explored this subject in sufficient depth. With a full recognition of my ignorance about *will*, I researched and wrote this book, ***The Power of Will in International Conflict*** to help satisfy my inner drive, pushing me to learn more about *will*. The book proved difficult to write because I didn't have a good starting point or existing framework. This situation came to my mind full force, as upon looking in the literature and military doctrine, I found a dearth of thought about *will*. I fixed what I couldn't find with imaginative and original thought fortified by great thinker's thoughts coming from my research into literature, philosophy, science, and history. I am proud to say the quality and rigor in my book of *will* turned out to be high, but I know the book to be challenging to read. Actually, working with the book takes study and more study. I assure you the book penetrates the subject of *will* to its core.

The Power of Will in International Conflict provides understandable and useable knowledge about this great phenomenon, *will*, that has lived such a long life and influenced so many people in peace and war. As I started this intellectual journey, and as I thought more over time since I wrote the book, *will's* meaning has evolved to become ever clearer. To elucidate my understanding in this compendium of thoughts, I created a framework for thinking about the subject. The framework assists readers to realize *will's* mysterious power, and it shows people how they can apply this power to win conflicts.

Pray tell the masses though, the book is not about freewill (the power of acting without the constraint of fate) except in one way-that is, controlling a foe's freewill via the employment of faction in sufficient strength to empower my *will* to triumph over a foe's *will* in the variety of battles extant in hybrid conflicts. I explain *will* as a voracious wolf, the wolf of volition-acting aggressively, pulsating, pursuing conquests, seizing land, forcing opponents to acquiesce, conquering cities, dictating thinking, governing how people worship, surrendering freewill, thus

submitting to my thinking, and my interpretation of policies and laws. Here is an ancient thought about *will*, though the unknown author uses 'volition' instead of my choice of words, '*will*.'

What barest the exit of that hungry wolf, volition. It can be that man has evolved into asceticism far enough to hold his natural tendencies at bay. It can be that a catalyst has not awakened this day. But know well all ye who dwellith here on this earth, it can be a monster that is held at bay.

This book of *will* provides the intellectual framework that I could have used as an intelligence officer in the US Army. I would have benefited from studying the book when I began my career as an Army intelligence officer in 1970. In particular, I needed the book of *will* as I experienced my service as an intelligence officer for 12 years in four US infantry divisions and when I was the *I2* (intelligence officer) for US Forces in Korea, 1996-1998.

With the hours I devoted to researching and writing this book, I submit, without equivocation, that *will*, as a concept, remains largely unknown today. For certain, in discourse, people occasionally mention *will* but when they do, they speak of exhortations, platitudes, or broad generalities. Generally, people decline to talk and explore ideas when the topic of *will* appears on the table of discussion. And, I have heard people claim that *will* is too complicated to study, cannot be learned, and therefore better left alone. I disagreed with such propositions then, and even more so since I wrote a book on *will*. I have publicly argued that *will* is the most important aspect of conflict; therefore, people must study and learn how to work with this subject.

This paper is a primer. As such, it provides some of the main ideas in my book, *The Power of Will In International Conflict*. I designed the primer to come to you as connected parts. In this manner, I provide readers with a short discussion of a few of the book's main ideas. To enhance understanding, I provide a visual at the start of each subject, and I scattered more visuals at appropriate places throughout the document. I talk to each. Accordingly, you will see 27 figures, three tables, and associated discussions in this primer.



Intellectual Foundation of *The Power of Will in International Conflict*

Figure 2. Intellectual Foundation

This book showers readers with discoveries about *will's* meaning, its intellectual underpinnings, and ways to turn theory of *will* into practice. Accordingly, in my view, a wide variety of people need to study and learn 'how to think' about *will*. Well, I hear somebody ask, Why? I answer, *The Power of Will in International Conflict* opens readers' minds and enables them to acquire a breadth and depth of thought sufficient to impose their *will* on an adversary. This knowledge and accompanying comprehension that comes from reading this book of *will* is of sufficient quality to enable people, players in the game, as it were, to anticipate an opponent's resistance and counter-moves and to gain the advantage because their thinking was and is and will be correct and of higher quality than any adversary. But if people remain ignorant about this wonderful concept, they carry a heavy burden-intellectual disadvantage-because *will* is the central idea of conflict. Later, in this compendium of thought, I make the case that with reading and studying this book, the reader can learn 'how to think' about attacking the foe's plan for imposing his *will* at its inception.

Studying this book provides readers with ways to overcome any attempts your opponent imposes to deny your *will*. As such, reading the book enables you to learn how to impose your *will* on an adversary and deftly deny your opponent's efforts to impose his *will* on you. This duality is always present and influential. The worthiness of this book comes from its concepts, explanations, ideas, thought models, definitions, connections with the past, present, and future, and journeys from theory to practice, all contributing to form a basis for winning. This book provides the cognitive wherewithal to understand and comprehend *will* and with its understanding, to gain a distinct advantage over any competitor.

A person reading and understanding this book receives a gift. That is, the book gifts you with the intellectual capability to outthink any adversary. As such, I postulate that you can use your newly found knowledge to seek, seize, and hold seven kinds of advantage over an opponent (initiative, tempo, momentum, knowledge, decision, position, and freedom of movement), any or all capable of contributing to winning bouts of *will* either singularly or collectively. And, the book provides several thought models to help readers learn 'how to think' about successfully imposing *will* on their adversaries as they first think about imposing their *will* on you.

What proof do you have of your claim, my alter ego asks? I respond, as a starting point "There is no definition for *will*, relative to conflict, except for mine." I found no explanation of 'how to think' about the thinking one has to do to think about *will*. This is metacognition. My book copiously satisfies this intellectual task. There is no system of thought to help people learn 'how to think' about the intricacies of this phenomenon. My book, *The Power of Will in International Conflict*, is *will*'s system of thought. I define 'how to think,' and I provide such a system. I found no author who has explored this topic, defined the term, developed the concepts, and put forth the argumentation and explanation to understand this great phenomenon. My book resolves these shortfalls and inconsistencies.

With this setting, know that throughout the book, I provide the reader with the wherewithal to put *will* to work in practical application. Thus, in this explanatory session of *will*, the basis of my work lies in 1) philosophy, 2) history, 3) theory, 4) conceptualization, 5) original thinking, and 6) my experience with the subject of conflict.

Will, a great subject and powerful phenomenon, deserves rigorous and continuous study and serious thinking in periodicals. We must use gained knowledge while thinking, discussing, and wargaming in military schools and in colleges that provide studies on the subject of *will* in conflict. For example, attendees at all Command and Staff Colleges, Schools of Advanced Military Studies, and War Colleges should not only read the concept of *will*, they must study it. Further, my book of *will* needs an important place in any organization's library of doctrine, as it remains alive fueled with energy from explorations, now to infinity, particularly in strategy, intelligence, planning, operations, decision-making, and command and control doctrine. My desire is that thinking people start with my work about *will* and use what they learn in other conflict-related subjects.

These notes serve as a primer-like explanation of the main ideas in the book. I want you to read the book from cover to cover. Why? To gain knowledge and thinking about *will*. Readers must obligate the time and expend the mental energy to comprehend the book's thoughts. In the meantime, this primer helps the curious intellect not yet committed to take the time and effort to read the book of *will*, all 385 pages.

Definition of *Will*

Short Version-The appearance of desire, life-force, purpose, empowered by resolve and sacrifice, perseverance and determination, yoked with strength of motive, capabilities, advantage and disadvantage, and imposing with actions, to accomplish a goal against a resisting or acquiescing recipient. The recipient of an imposition of *will* must have a sufficient strength of motive and capabilities to resist or capitulate.

- **Each side in a battle of *wills* must assess sufficiency of their sacrifice and passion and wargame their adversary's willingness to sacrifice and arouse passion.**
 - **Errors in thinking about *will* can affect all combatants in battle of wits.**
 - **If the strategist, planner, and/or analyst ignores serious and rigorous thinking about *will* they proceed at their peril and expose themselves to danger.**

7

Figure 3. Exploring A Definition of *Will*

With my definition of *will*, I suggest to my reader that *will* is a struggle that occurs in both moral and physical domains. It extolls the importance of emotion in conflict such as sacrifice and passion and discusses conflict as connecting with conflicts of *will* in the past, present, and future. In my judgment *will* has a heavy presence, indeed primacy in the determinants that dictate winning or losing in conflict.

I experienced the need to explain my thinking about this great phenomenon *will*, on a sound basis coming from history, philosophy, theory, and creative thinking. With this foundation, I could now think about *will* and generate the theory and thought models necessary for helping people understand this difficult subject and put its theory and concepts into practice. Accordingly, I started with a definition but know that I experienced a difficult time in developing the definition. You see it at the top of this section of the primer. My intent came from thinking. It involved shaping *my thinking about the thinking* of how opponents view the central idea of all conflict, the concept of *will!*

Until now, a particular and important vacuum has existed in literature involving the nature of conflict between people, armies, organizations, nation states, teams, and so on. The vacuum is- there is no definition of *will*. Its notable absence forces the imposer of *will* or recipient of said action to think, plan, and act while missing a certain knowledge of the central idea of all conflict-*will*. As such, contestants in a fight lack the intellectual wherewithal to optimize an action to impose one's *will* or if I'm the recipient of an aggressor's imposition of *will* and I don't know the meaning of *will* then I have a problem. That is, I have a clear weakness relative to the foe- I lack a cognitive approach of sufficient quality to ward off my adversary's imposition of *will*.

In history, I had hoped to find insights involving how people think about *will* and its ramifications before, during, and after a collision of *wills*, whether attacker or defender, only to

find nothing that I read was what I sought with one exception - Chapter one of the book *Thinking In Time* that focused on President Kennedy's thinking about his Kremlin opponent's thoughts during the Cuban Missile Crisis.¹

This dearth of thought about *will* came as a surprise. I thought the subject would be in US military doctrine-I found neither definition nor discussion. Overall, what I found were explanations of the results or outcomes from battles of *wills*. That is, I found outcomes and the actions people used to either impose or deny impositions of *will*. Generally, the outcomes of battles involve killed in action, wounded, missing, mistakes, what ifs, monetary costs, property costs, refugees, hegemonic outcomes, geo-political outcomes, domestic and international political outcomes, territorial outcomes, and implications-all of interest but not dealing with the thinking going into the front end from desire, life-force, purpose, assessment of strength of motive, capabilities, and so forth, from a given aggressor's perspective and from his adversary's perspective. That is, if I'm thinking about attacking someone to impose my *will*, a thought process, a cost/benefit is at play, a 'what if I lose the fight, kind of thinking must occur. But it depends ... on the participants, their culture, the potential outcomes, the operational context, emotions, such as hatred and retribution, clashing thoughts, and so on.

A constant always appears in all kinds of conflict-thought. I expect thought, deep thought, to specifically focus on why one person would want to impose his *will* on a resisting or capitulating enemy in a specific operational context while fully understand the kind of war he would be embarking upon-a fundamental thought of any statesman and military commander.² This thinking shapes how the struggle plays out for all sides in a conflict.

A definition proves important and needed. Please allow me to explain. Any kind of conflict involves imposing let's say, your *will*, on another person or entity or state and denying an adversary's attempts to impose his *will* on you. But, do I know what *will* means? The answer is no. Must I know what *will* means? The answer is yes. So, I looked for a usable definition and found none. All I could find in my research were platitudes, but I found no mention of *will's* meaning and subsequent thinking about *will* in doctrine nor the cause to effect relationship for the imposition actions one needs to impose their *will* successfully. Hence the need to introduce a definition of my own and let people know that it serves as the center point for my thinking of *will*. It enabled me to write the theoretical and conceptual parts of a system of thought for 'how to think' about *will*.

By way of background, I started working on defining *will* in my 2009 book, *Intelligence Analysis How To Think In Complex Environments-but*, it was only a start and a poor effort. As I wrote that book from 2006-2008, I only briefly touched on the subject. But as I searched for a serious discussion of the topic, I found a vacuum-in the literature, Joint doctrine, and in my thinking. Knowing my discussion of *will* to be weak in my analysis book, I improved the definition and explanation of *will* in my next book, *Intelligence Collection How to Plan and Execute Intelligence Collection in Complex Environments*. I wrote this book from 2009-2011, and it was published in July 2012. Over the years, I kept tinkering with and improving my definition of *will* and its theoretical and conceptual explanations. I purposefully evolved my thinking by listening to criticisms and suggestions from my students. Nobody had a worthy

¹ Richard E. Neustadt and Ernest R. May, *Thinking In Time* (New York: The Free Press, 1986), 1-16.

² Carl von Clausewitz, *On War* (Princeton: Princeton University Press, 1976), 88-89.

definition, but the ideas that rolled around those seminar rooms helped me form what you see now.

Let's take another look at the definition I developed for *will* as I use the term/concept. With the definition below, you see a short-hand definition. The book has a more detailed definition. This definition presents *will*'s essence. It provides sufficient thought to enable the reader to understand what *will* means. The definition provides sufficient suggestion and implied direction to poise our minds to learn how to think about the concept. Understand too, if a person understands the definition, they can envision the intellectual foundations and structure of *will*. And a definition establishes the conditions to coalesce *will*'s many parts and pieces into a whole, the whole of *will*. With the whole and its parts and strong thinking, one can gain the perspective to understand the concept. Again, my definition of *will* is:

The appearance of desire, life-force, purpose, empowered by resolve and sacrifice, perseverance and determination, yoked with strength of motive, capabilities, advantage and disadvantage, and imposing with actions, to accomplish a goal against a resisting or acquiescing recipient. The recipient of all imposition of *will* must have a sufficient strength of motive and capabilities to resist or capitulate.

Each side in a conflict (it always take two parties to conflict) squares off and seeks to win dominance in a struggle of *wills*. To win, each side is pitted against each other; they fight. One side wins, the other loses. Winning though, includes struggles for dominance of the moral and physical domains. Each competitor's goal ... to impose their *will* or deny their adversary's efforts to impose his *will*. A struggle of *wills* always involves these two broad domains; thus, contestants must first take a binary approach and assess their capabilities, strength of motive, passion, sacrifice, determination, perseverance, advantage, and disadvantage relative to their opponent's essential elements of *will*. You find in this book an explanation of the importance of these subjects in the 14 element thought model for thinking about *will*. I discuss all 14 elements within the chapters in the book and later in this missive, but for the sake of introduction, here you see the 14 essential elements of *will*.



Figure 4. 14 Element Model of *Will*

People can readily assess the two sets of capabilities inherent to the physical domain, which generally involves capabilities, numbers, time and distance. But as Clausewitz tells us with this following passage, people cannot assess the moral domain for it is unquantifiable.

If you want to overcome your enemy you must match your effort against his power of resistance ... the product of two inseparable factors, viz. the total means at his disposal and the strength of his *will*. The extent of the means at his disposal is a matter ... of figures and should be measw-able. But the strength of his *will* is much less easy to determine and can only be gauged approximately by the strength of the motive animating it ..³

My book presents what I consider to be *will*'s essential elements. In any conflict, these elements appear, but vary in appearance, influence, and importance. Sometimes all perform , at other times, in other contexts, they appear and disappear, gain and lose strength, influence and not influence. Suffice it to say, one finds extreme variability among these elements of *will*-perseverance, determination, passion, sacrifice, advantage, and disadvantage. They can be extreme in how they change appearances and the seriousness of their influence. As an example, as I wargame the adversary's wargaming, I might focus on my adversary's willingness to sacrifice and his ability to arouse sufficient passion in his people to endure hardships to win. Outcomes of conflicts in the moral domain can never be certain because they involve activities that the human mind can't precisely measure. This is a place that an appearance and influence of both logic and bias errors often erupt, as I wargame from my perspective, his perspective, and as I wargame the adversary's wargaming. I believe that winners in future conflicts always wargame to anticipate what might happen during clashes of *will* in operational contexts. My book advocates traditional wargaming, but I added an essential aspect of thinking about *will* and conflict. That is, when I think about *will*, *I must wargame my opponent's wargaming*.

Struggles for dominance of *will* exist in a turbulent operational context, and its inhabitants live in a wide variety of highly influential cultures. Culture shapes personalities and influences how they think and decide. Culture with its rules proves to be the fuel for the engine of action models and the activities and energy expelled to impose one's will on their adversary. We'll discuss the effect of the culture and its rules on the action models an adversary may employ, but later in this primer. For now, start thinking about this diagram:

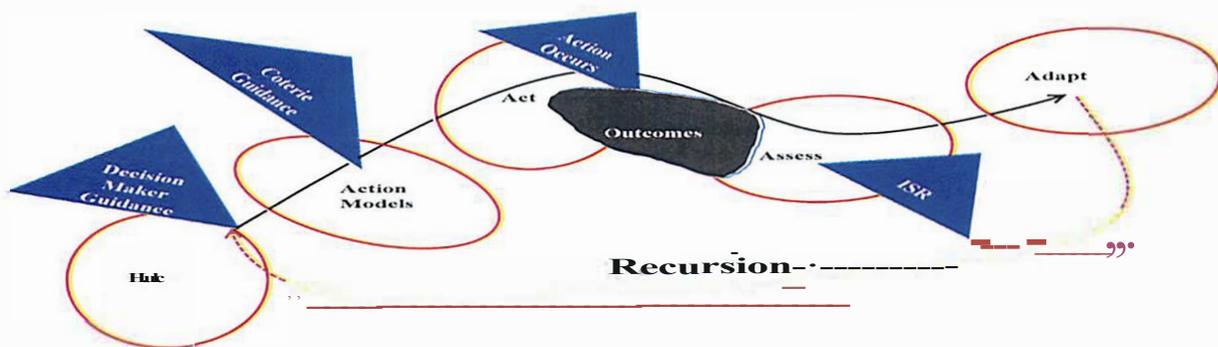


Figure 5. Incw-sion and Cultural Rules

³ Clausewitz, 77.

'Talking' With the Masters and Using Their Ideas

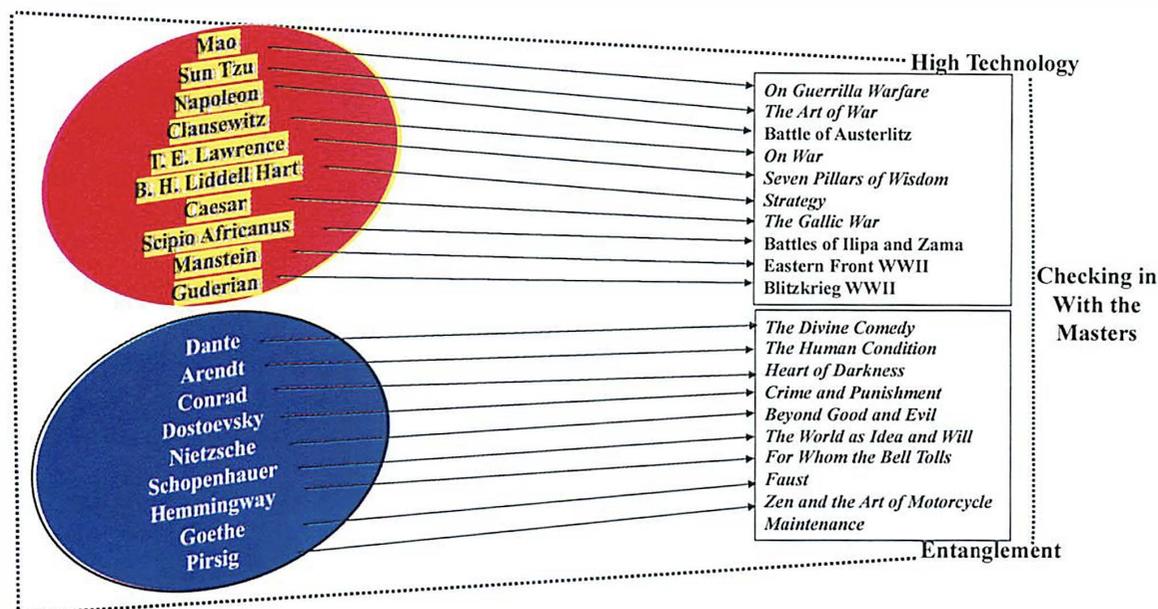


Figure 6. Talking With The Masters and Using Their Ideas

While researching for this book, I plumbed the thinking of authors in 81 books. The books ranged from literature, poetry, to books on science, philosophy, and history. I thoroughly enjoyed talking with them in my quest to understand *will*. While none of the books I chose to use dealt explicitly with the notion of *will* that I sought, I borrowed ideas where I could. In many cases, I found their thinking useful, even while acknowledging their actions came forth from long ago and knowing that historians and poets (e.g., Homer and *The Iliad*, or Virgil and *The Aeneid*) undoubtedly took some license with events and provided some of the details via imagination and the lore from stories their elders passed around the campfires. Some of their thoughts and theories have lasted through centuries and in some cases, millennia. Their wisdom certainly helped me explore the phenomenon of *will*.

Each of these authors bequeathed a peek into the shrouds encasing the origins of action, but I could not find what I sought. I did find, of course the expulsion of actions to impose one's *will* on a specific adversary. With the forthcoming actions and the consequences therein, I surmised what they might have thought, but in every case, conjecture still ruled the day. I discovered nary a word about their 'how to think' processes as they contemplated imposing their *will* against a resisting force or if roles were reversed and the aggressor suddenly became the defender. The notion of clashing *wills* would come forth regardless. What were they thinking as they sought to breach the adversary's defenses? Why did he resist? What were his *will* actions when he set them against the opponent's actions? What was the recipient of this aggressive imposition of *will* thinking? Why did he resist? Why didn't he just capitulate?

I decided to follow the actions and discern aftermath activities from the impositions of *will*. In this way, I scraped vestiges of rationale from battles relative to each perspective, the operational context, reported elements of nonlinearity-friction and turbulence-and subsequent syntheses to discover what *will* means. I wanted them to reveal what they were thinking as they planned, then what they were thinking as they executed an imposition of *will* on their adversaries. I wanted to know how they thought and anticipated their adversary's thoughts about the impending clash of *wills*. I wanted to know how they thought about how this adversary could be intending to twist the clash to his advantage and turn the tables of fate by suddenly stealing the initiative and imposing his *will* on them.

I sought to know their thinking-who, what, why, where and, when, about their deliberations concerning cost and benefit relationships, risk analyses, and outcomes beckoning when the imposition of actions to force their *will* on others came into play. I sought to know their aim, goals, and objectives. I sought to know 'that which truly matters.' I wanted to know their thoughts about anticipating probable and least probable actions coming from the play of their opponent's *wills*. I wanted to learn how they thought their adversary might be thinking about how they were thinking. I wanted to know how they wargamed the adversary's wargaming and *how they would defeat their own plan*. I also wanted to know how they thought about imponderables and what they anticipated their adversary was considering uncertainties.

I grew to depend on their thoughts pertaining to *will* as baubles they dropped at various places into the master's battles and resultant works and histories-more through implication than empiricism. I examined ideas from all sides to help me think about this complicated subject. The thought venues coming closest to what I sought came from Napoleon at the battle of Austerlitz in December of 1805 as Alexander wrote; and Scipio Africanus's victory of Ilium in 206 B.C. as Scullard wrote about. I also relied on ideas from Clausewitz's *On War*; from T. E. Lawrence, and his masterpiece *Seven Pillars of Wisdom*, Caesar's *Commentaries*, particularly his amazing rendition of the battle of Alesia in 52 B.C. I also found Sun Tzu's theory and reasoning about war to be of use in my exploration of *will*, particularly his discussions about attacking the enemy's plans at their inception, deception, psychological operations, and the interesting theory about extraordinary and normal forces and synergy born therein. He discussed these points and many other theories in the aphorisms that came forth in his book, *Sun Tzu and the Art of War*.

Literature also proved helpful. In particular, I borrowed from the ideas of political theorist Hannah Arendt, authors-Dostoevsky and Tolstoy, philosophers-Nietzsche, Schopenhauer, and Pirsig. All of these authors helped me form the basis of my thinking. Additionally, Goethe's Faust and the dangers in unresolved quests for knowledge and Kant's thinking about man's self-serving nature, offered ideas helping me to understand why self-interest always dominates any attempt to rationalize why people fight over the dominance of *will* and why people have always engaged in such selfish activities. Such struggles between competing, resisting entities exist today and, I dare say, forevermore.

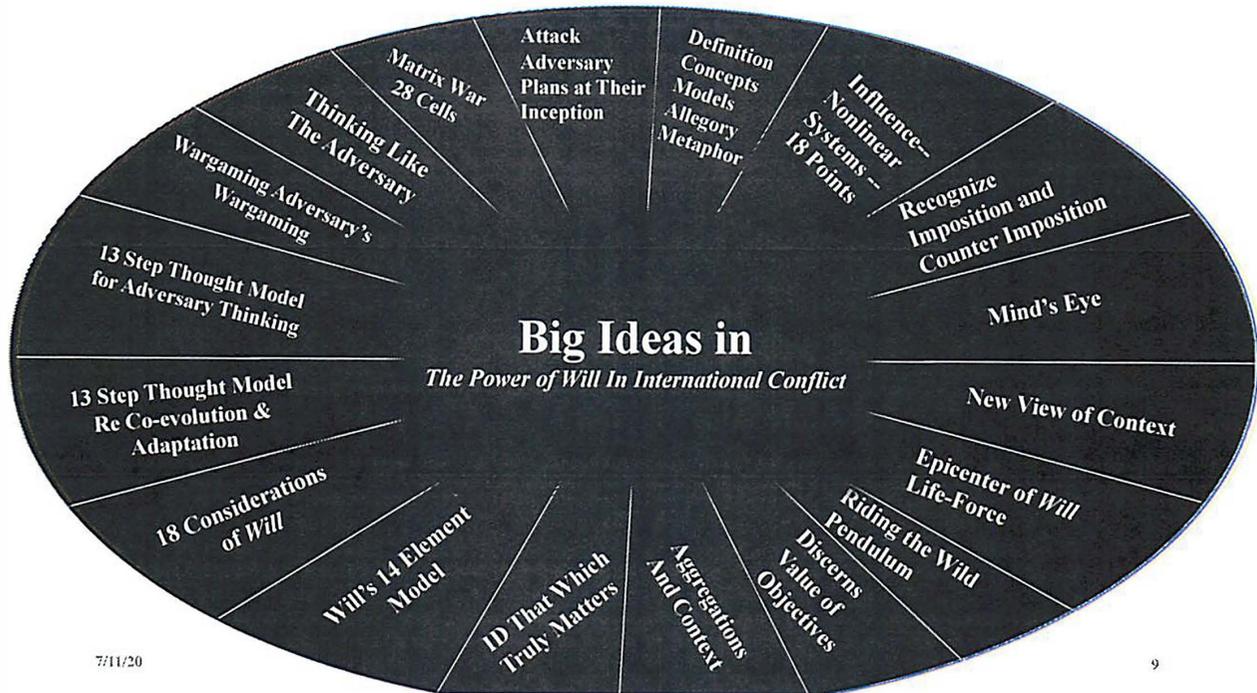


Figure 7. Select Discussion of the Book's Big Ideas

Every work of any value has big ideas. This book has 18 but I'll discuss 13 in this primer. Please know my thoughts in this primer will be brief. You can find more intellectual heft in the book, *The Power of Will In International Conflict*. Here you see some of the big ideas this primer introduces/discusses:

1. 14 element model of *will*
2. Intellectual structure for *will*
3. Importance of moral domain-passion and sacrifice
4. Riding the wild pendulum-duality
5. Wargame the adversary's wargaming
6. Aggregations and operational context
7. Role of culture on complex adaptive systems
8. Thought model-co-evolution and adaptation
9. Think like the adversary
10. Adversary's mind's eye
11. Thought model-13 steps, adaptive adversary's thinking

12. 18 considerations of *will*

13. Matrix War

Within the book's covers many more ideas exist. These ideas deserve your concentration and deep thought. With such effort coming from your minds, the book can only improve via intellectual expansion.

By big ideas, I'm talking about designs that grip the reader's mind. They relate to and form part of the book's framing ideas. Big ideas prove sturdy, robust, resilient, and forthright. They provide the protective and shaping structure and means to deliver the book's thought models, definitions, historical and literary references, metaphors, allegory, high country of thought, Chautauquas, systems, new concepts, examples, anecdotal evidence, poems, definitions, and explanations. The big ideas bond with the book's final frame. It is the book's intellectual frame and filler ideas that I ask you to think over and either immediately accept or come to accept as true, as you read the book. The marriage of framing ideas to big ideas to filler ideas contain, within their entangled being, harbingers of ideas about *will* yet to come.

With a good reading, serious bibliophiles will draw inferences how these ideas, one by one, yield aggregates, bond with larger aggregations, and connect thought strands to other ideas and concepts in the book. As you experience the book, with its ideas bonding with your thoughts, you discover a view of the expanse and depth of *will*. The concept has a life and grows when people think on it, improve and expand its ideas, and know how the book serves to guide praxis.

A big idea is part of a larger whole. And it is the functioning whole that is important. But readers of *The Power of Will In International Conflict* need to identify and elucidate the book's big ideas and filler ideas to envision, explain, and sense the whole under examination. The reader's mind will judge the quality of function, how its parts meld, thus judge the book's coherence. These big ideas identify thoughts within the whole and how they function therein. The book's coherence connects the ideas and parts of the book. It also contributes to the whale's appearance and functioning. Know well that many ideas and concepts summon the reader's thinking in order to merge with this, the system of thought for *will*.

As another explanatory thought, a big idea should suggest intellectual fun by way of newfound implications and inferences. An implication, in the vernacular, is something that has not happened, but that a human mind 'senses' to be coming into being. An inference is a conclusion one's mind reaches when satisfied that sufficient facts and experiences exist to proffer and defend one or more conclusions. Said another way, an inference presents the output from the work a person's mind experiences as data penetrates their data gathering portals. Recipients' minds render this data into meaning. The data I'm speaking about arrives as images, appearances, sounds, tastes, traces, or other phenomena. The data can be former, thus old and relevant or irrelevant. It can be present and useful or irrelevant, it can be coming, or forewarning via your intuition. It is intuition that causes us to experience a yearning and motivation, perhaps to solve a mystery, and bedeviled by a perceived need to explore further a sensing. This urge comes to life in the human mind, but it is undefined and unshaped. With an implication, a person intuits, and this feeling or sensing becomes clearer with discovery and exploration. It takes shape with speed and clarity relative to the openness of an involved mind to accept and explore the

implication blooming in the rich soil of the mind. With sufficient form, the transformation of implication to an idea worthy of pursuit takes us into a higher level of thinking, a ladder extending to the heavens of knowledge. This is where mind draws inferences of meaning and relativity.

Such thinking requires a high-level of thinking, including analysis and synthesis, holism, integration, combination, relationships, aggregation, and fragmentation and coalescence. The pressure on the human mind to perform these mental functions demands deeper thinking and more intellectual effort than when our minds deal with smaller and simpler efforts to understand ideas. Higher level thinking requires deep thinking, which means-taking the time and expending the mental energy to think about a problem or issue critically and deeply. Big ideas urge a reader to admit to one's own need to study and learn more, agree or disagree, search for reasons as to why you tilt one way or another, see connecting ideas and their links, and discover ways to investigate the many mysteries that remain even after finishing this book. Readers of this book are the people who always ask questions, even when the answers don't exist or remain unattainable. With such thinking, people should grasp at least eight additional implications that drive the need for synthesis-

1. Improve upon the book's existing big ideas; add bigger, filler, and structural ideas.
2. Improve the book's thought models. A need exists for more detailed thought models about *will*; use them in experimentation, mental combat, and wars of wits involving struggles over the dominance of *wills*.
3. Wargame the adversary's wargaming. Eventually, smart avatars and synthetic operational contexts will merge with this part of thinking. Random injections of vagaries of nonlinear system's appearances and disappearances, thus influences, must always come into play in any planning or thinking about modern mental combat in wars of wits.
4. Expound upon the notion of *will* with book-provided anecdotal, experiential, historical, philosophical, and literary examples, observations, experiences, and ideas. Find and plumb the minds of other thinkers. Study the book's bibliography and find clues for more books to broaden and deepen your knowledge of *will*.
5. Ponder the book's definitions, improve same.
6. Learn, apply the book's concepts; add new concepts to my notion of *will*.
7. Turn the book's theory into practice. Clashes of *will* happen to be real and important. Thus, decision-makers, strategists, planners, and intelligence people first understand the theory of *will*, then put it into practice to attack enemies' plans at inception and defeat the adversary in mental combat within ceaseless wars of wits.
8. Develop new or expand upon existing implications as you read. Summarize what you liked and disliked about the book. Draw implications; they come to inquisitive and intellectually active people. Such blessed people use implications to drive mystery projects. With mystery-provided and fortified data, people turn this data into

information and synthesize information into knowledge. Developing valuable knowledge takes time; therefore, when time is short and pressure is on, sometimes people must make decisions with both data and information, but they know that risk increases.

uwill,--The Essence of the Problem,n

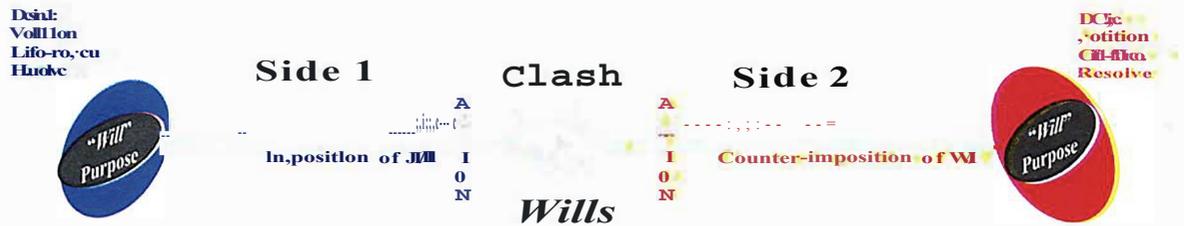


Figure 8. Essence of the Problem

I present this graphic to help readers grasp what *will* in conflict means. Here, I present the nub of *will*. As such, I narrow *will's* breadth and depth so that a reader can see and ponder the parts of *will* striped to its essence to grasp the concept with its basic elements and relationships. As you see in this simplified scenario, one side attempts to impose their will on the other side. The other side could acquiesce, if he determines that giving up makes the most sense, so advises his calculus of *will*. He judges costs and benefits of his capabilities, purpose, strength of motive, passion, and sacrifice relative to the attacker's, and he determines if these elements of *will* are or are not in his favor. But, in this case, the receiver of the first blow and aggressive imposition decides to resist; a struggle over superiority of *will* ensues.

Observers of this graphic tend to concentrate on the clash of *wills*. The wise person though, views the slide holistically and bores into the right and left sides, looks carefully, and finds the identical four words on each side of interest. The words are desire, volition, life-force, and resolve. They constitute, in my thinking, the source of *will*, its birth, as it were. Remember these words as with the identification of the inception of *will*, and before a struggle ensues from the desire, volition, life-force, and resolve, you might want to consider imposing some kind of preemptive action. Your intent could be to attack the adversary's plan and intent at their inception and thus thwart this fellow's aim, hence crippling any attempt to impose his will via actions.

Since the beginning of time, men have competed with each other to obtain what one side wanted that the other side possessed and refused to yield. This is the genesis of *ow-* subject. It involves the purposeful release of energy to impose one's *will* or deny a foe's imposition. Action, the active force, involves one or more possible engagements or arrangements that let's say side one uses to impose his will on side two and how side two resists. At the strut, my imagination takes me back to the dankness of a dark cave where one caveman covets a fur, a woman, something that another man possesses. The coveter's desires, volition, life-force, and

resolve come into play, but the coveter must also learn to consider the mind of the coveted. If the coveter decides to move from a passive state to an active state of mind that leads to imposing his *will* on the coveted, he attaches these invisible motivational thoughts to a calculus of sorts that yields costs and benefits and risks. If all is a go, he then designs or designates purpose, strength of motive, assesses capabilities, and so on, and only when he feels comfortable that the odds of winning a potential struggle are on his side does he act to impose his *will* on his opponent. If the coveted in this imposition resists, the two struggle; one side wins, the other side loses.

Nonetheless, nothing in life is ever so simple as what you see here, in this graphic. The clash of *wills* is much more complicated-now you are going to delve into complications.

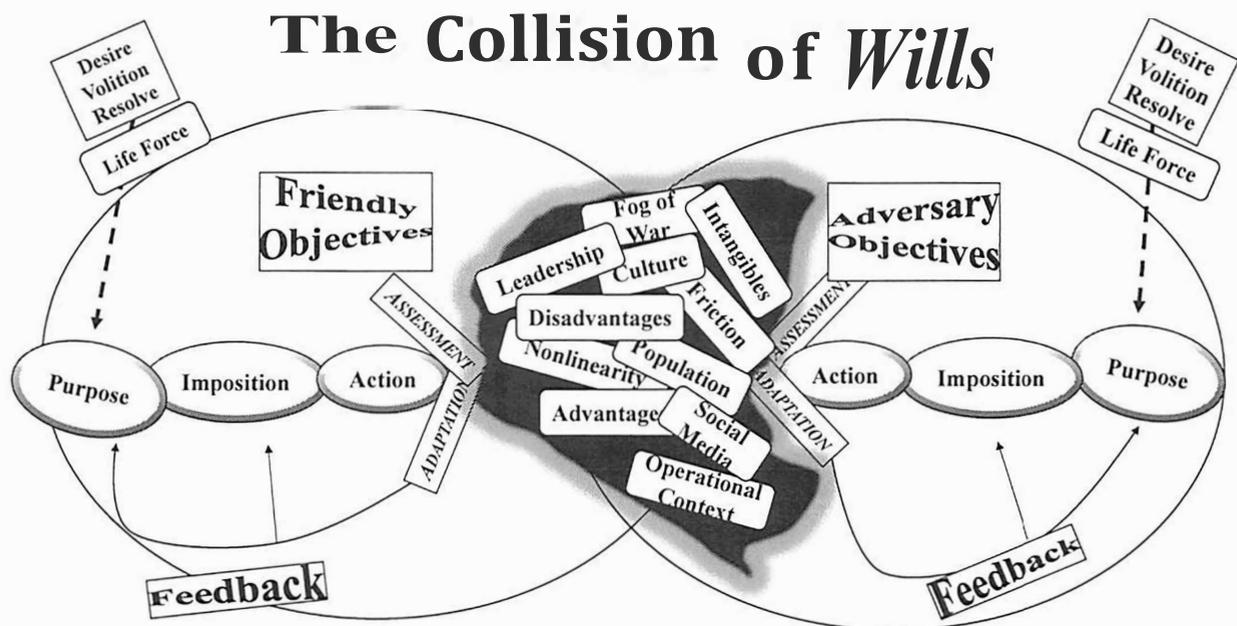


Figure 9. Collision of *Wills*

In this visual, two *wills* clash. It is definitely an impact, even in cyber, information, and cognition domains. You notice the presence of clashing objectives. You notice the presence of clashing assessments and adaptation. I need you to remember, all the pieces matter in frays over *will*. This is a truism that always serves one well while thinking about difficult problem sets involving *will*.

Notice the recursion occurring with the all-important feedback loops for each competing organism. This is rudimentary but important work for complex adaptive systems (CAS) as they compete and act, assess their actions, and try to adapt faster and better than their adversary. Adaptation-we find yet another thematic important to the idea of *will*!! But your mind cannot rest. You feel a need to think again about the objectives driving each side in the struggle, as one side considers their own and their enemy's objectives. And, I want you to sense and comprehend the operational context for its many possibilities, both good and bad ... Do recognize, then

eventually actions and reactions. Additionally, while vying for ascendancy of *wills* in complex operational contexts, several of nonlinear system's characteristics appear. They come and go, appear and disappear, grow powerful and become weak. The back end, including 11) imposition 12) action, 13) assessment, and 14) adaptation, also remain relative stable as functions of *will*. The model shows that recursion always occurs and provides data, some sought, and some given by way of data inputs from the operational context.

The 14 elements involve the most important aspects of *will*. It took time to dissect *will* and to find its key elements. I learned that not all elements play all the time. Thus, I had to consider that some elements cannot be quantified, and some are not stable. Some I believe to be resilient to the sway of sensitive variables, while other elements prove highly susceptible to sensitive variables' influences. In my view, these 14 elements or facsimiles thereof constitute, or better said, represent, what any thinking foe uses to impose his *will* or deny another's *will*, but again, some elements come and go while others do not appear at all or appear all the time.

The flux affecting all elements comes from battles of wits via thinking of human beings, colliding actions, outcomes of action, friction, influence of sensitive variables, seeking data for assessment and subsequent adaptation actions, unexpected chance events, unexpected data coming from the context, and the turbulence and change involved with chaos. Element fluctuation also comes with constantly changing intensity and importance. Indeed, in conflict, truth changes; so it goes with the status *ofwill's* elements. To top it off, each of the middle elements prove to be intangible, and thus lack finite shapes and forms. They prove difficult to understand, much less to anticipate, because of their abstract natures.

I must say that abstractions have levels or degrees to help us grasp meaning. High levels of abstraction prove difficult to envision and to understand. With lower levels of abstraction, one discovers more clarity, hence understanding. But high and low-levels of abstractions can best be envisioned and perceived as a whole, regardless of difficulty in envisioning the high-level of the abstractions' contours, smells, and feel. Know well that overall abstraction of *will* makes it difficult to imagine, and to know the elements' nature, even their sense of being, and our minds struggle to understand their appearance. Yet, we know these elements 'play' in the operational context during clashes of *will*. A combatant can anticipate fluctuation of elements to always surface and cause intensity to vary and importance to come and go. I submit, in any attempt to deal with *will*, people cannot ignore these elements without accepting their own risk and peril.

Sometimes 'select' essential elements of *will* do not come into play because of weakness, pressures, or irrelevance. Change in the model's middle elements oscillates often from variations in importance, coming with clashing missions, the effect of nonlinearity, the presence and influence of sensitive variables, the hovering specter of chance, the ever unpredictable adversary's assessment of actions, subsequent collection, and passage for evaluation via recursion, and subsequent adaptation.

This model comes from my book, *The Power of Will in International Conflict*. I have found nothing about struggles over *will* to be more peculiar than my discovery of the play of humans and their organizations as complex adaptive systems (CAS), and their absolute need to co-evolve and adapt better and faster than their adversary. The model shows the importance of all-important omnipresent feedback involved in assessment and adaptation inherent within CAS as they compete with other CAS via recursion channels.

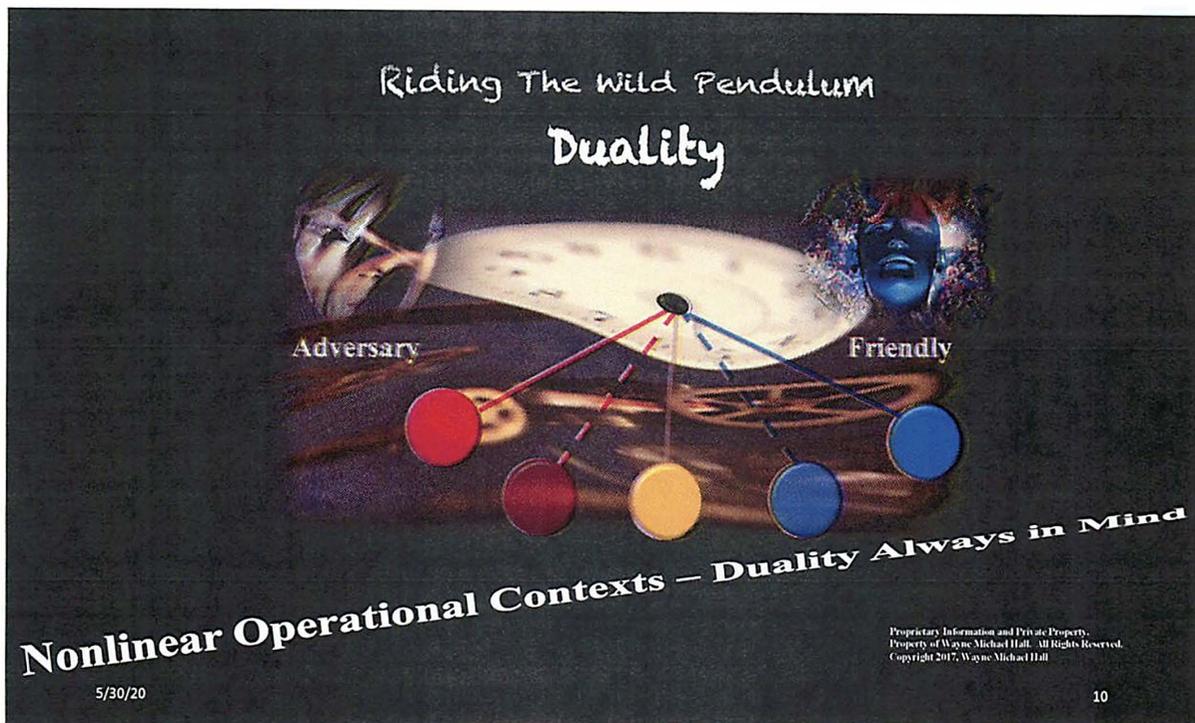


Figure 11. Riding the Wild Pendulum

This visual depicts two sides—red and blue—fighting one another. They fight to win by imposing their *will* on their opponent. I'm speaking of the conflict between and among individual human beings and their organizations, machines, governments, and nations.

The visual depicts the presence of active or resting nonlinear systems awaiting the 'opportunity' to wreak havoc, often without warning or even hinting of the looming intent and the immense potential outcomes at play. The graphic depicts some of nonlinearity's 18 characteristics making their appearance on the field of strife. Not all of the characteristics prove to be active at the same time. But one senses their presence even when dormant. It is wise to attend to these sensings, since the cause for sensation lays in the immense, potential power inherent in battles of *will*. When the cause for the sensing comes from actions of the wolf of volition as he exits his keep, and all hell breaks loose.

The visual depicts a surreal environment, where permanent is change, time is timeless, yes is no, good is bad, safe is risk and so on. In *this* portion of the operational context, turbulence and change rule and even appear as constants. This condition is chaos. It reigns supreme owing to effects of nonlinear contexts surrounding and shaping each opponent's thoughts and actions.

In this visual you see a theoretical pendulum. It swings back and forth, but not in a smooth arc. Instead, the pendulum gyrates. It travels first to blue then to red then to the middle point of the arc. My intent—ride the pendulum, drop off on the adversary's side, enter his mind, learn how he thinks and plans, ascertain his aim, goals, objectives, strategies and 32 other considerations. I intend to discover his *will's* 'viscera' by using the 14 element thought model I introduced in this primer. I search for and discover his version of this model of *will*. Armed with

this knowledge, I determine the power and energy of each element of the two wargaming models-first from his point of view and how he thinks about us and how he thinks we think about him, and then from our view of how he thinks we think about how he thinks.

In my mental work, I determine the elements of *will* having the greatest probability to appear and develop my thinking accordingly to influence his thoughts and actions. I deem these elements essential. I deduce the elements having the greatest probability of remaining dormant, but I know and recognize their nature befittingly to realize how fast they can change from dormant to active. The dormant elements exist as potential, and they prove capable, such as a chameleon, of coming forth and changing shapes and colors as the situation and context change.

Given the adversary's aim, goals, objectives, resources, constraints, strategies, and so on, I anticipate the adversary's actions. Specifically, I determine how he plans to impose his *will* on me via actions. I anticipate how he plans to assess outcomes of his actions. I learn his means of assessing, e.g., his intelligence systems, his recursion operations that return assessment data, and how he plans to use the recursive data. I then determine how he thinks we think about assessing our actions. I determine how he thinks we think he thinks we think about assessing our outcomes. I determine how he evaluates assessment data, how he learns, and how he adapts.

I then discover and evaluate the efficacy of his actions. They prove tangible and intangible. The presence or absence of certain shaping forces makes them one way or the other, or a combination of tangible and intangible. I judge preeminence in his model. I specifically think about his desires, life-force, purpose, strength of motive, passion, sacrifice, etc., and pack away what I learn for later use. I consider how the adversary views the operational context. From his view, I consider the advantages this peculiar context presents to him and disadvantages. I consider how he thinks about the advantages and disadvantages the context presents to us. I consider how the adversary thinks the context presents advantages and disadvantages to him. I consider if the adversary has or promises to be thinking how we think the context presents advantages and disadvantages to us and to him, our adversary. Also, I consider how he thinks we think he thinks concerning advantages and disadvantages; however, I maintain a tight grip on the standard of always thinking and feeling from his perspective but relative to mine.

I find that I discover some of what I want, never all. I need to discover more. So, I hang on the pendulum and swing to the friendly (see the blue side) side's processes of conclusion, recommendations, wargaming, assumptions, defeating our plan, the possible influence of bias and logic errors, costs/benefits, risk, and the process of decision-making (e.g. red teaming, questioning the presenter, attacking assumptions), and so on. I think on my decision-maker's thoughts relative to the adversary's mind I just visited. I continue to ride the pendulum until I reach my standard level of sufficiency; it alerts in my mind. Or, I could quit because I'm out of time or when my actions become obviously attributable, causing me to suspect that my enemy knows I am entering and robbing his mind.

Pick what you want to wargame. Think as a friendly analyst and also wargame the adversary's wargaming. Adjust, consider his mistakes coming from his relative logic and bias errors. And recognize your proclivities to err. Know how he intends to protect his penchant to err. Think about his intentions to attack and exploit your penchants to err and include your typical logic and bias errors. Anticipate how he thinks you protect yourself from his manipulation of your thinking via deception, changes in plans, inputs from intelligence, realization of duality, views of context, offsets from observer/observing relationships, and so

forth. Take the time and expend the mental effort to think about wargaming your adversary's efforts to wargame. Anticipate how he could react as you discover his condition setting. Anticipate his counters if you discover his condition setting, preempt, and thus cause an alteration to his plans or their premature stoppage as they come into being.

This is difficult work. You have to be in his skin and think like he thinks and knows his culture. You have to anticipate how various experiences could influence his action models and how the all-influential culture-laden rules influence his action models. Identify the cultural-driven rules that prove most important to his thinking and design actions that could shape and drive these rules and influence his models of action accordingly.

Then, jump on and ride the pendulum again. Jump off in the middle of the arc and strive to think objectively, knowing full well that it is impossible to be objective. Remember, you are a subjective being. Thus, you employ a red team to examine your assumptions, your imaginative impulses, and thinking in general in this process. As an example, one of the assumptions under red team scrutiny should always involve how I think my enemy thinks about his logic and bias errors and my approach for exploiting such errors. Such work demands satisfaction of a requirement, that is knowing and understanding how your adversary: 1) perceives, 2) thinks, 3) plans, 4) decides, 5) acts, 6) assesses, 7) develops and uses observables to drive assessment collections, 8) collects data, 9) turns data into information, 10) turns information into knowledge, 11) evaluates outcomes, 12) learns, and 13) adapts.

You also consider how the adversary thinks about how your side thinks via a 36 element table. If you think like he thinks you are thinking about each of the elements, a door opens into his mind and provides time to peek into not only how he is thinking, but also how he plans to unleash actions to attack your thinking. Here is the table. Please read from left to right.

Strategic Aim	Goals	Objectives	Resources	Constraint	Strategies	Tactics	Purpose	Will
Advantage	Disadvantage	Pressure Points	Decisive Points	Centers of Gravity	Co-evolve	Adapt	Time	Risk
Sweet Spots of Decisions	ISR	Observed vs. Observer	Condition Setting	Deception	Strength of Motive	What Truly Matters	Will's 14 Essential Elements	Context
Trinity	Duality and Pendulum	Wargame Adversary Wargame	13 Element Model	Logic Errors	Bias Errors	Nonlinear Systems 18 Elements	Matrix War	Discern How He Thinks You Think

Table 1. The Adversary's View-36 Element Strategic Thought Model

Now, once again, employ a red team, steeled with iconoclasts, and attack your thoughts, plans, and assumptions. You want them to identify your logic or bias errors and your assumptions. Think about your enemy's views as they clash with your views, his intentions against your intentions, his advantages and disadvantages from the context versus your contextual advantages and disadvantages. Think about your thinking locked in mortal combat with his thinking, your logic and bias errors fighting his logic and bias errors, and your battles with him over quality, truth, facts, evidence, objectivity, and subjectivity-all important aspects of flummoxing his thinking at the right time, place, to create the right outcome.

Spend time thinking about how he defines winning battles of *will* and how such knowledge can come into play to promote your *will*. Spend time thinking about how you would defeat the friendly decision-maker's plan. Compare the two vectors. Be as neutral as possible about what you have learned about the thinking of each side. I want you to 'arrange his mind'⁴ and anticipate and watch for how he intends to 'arrange your mind.' Be wary as he forthrightly sets his plans into motion and watches for a presence of any residue of energy emanations signifying possible opponent (your) imposition actions.

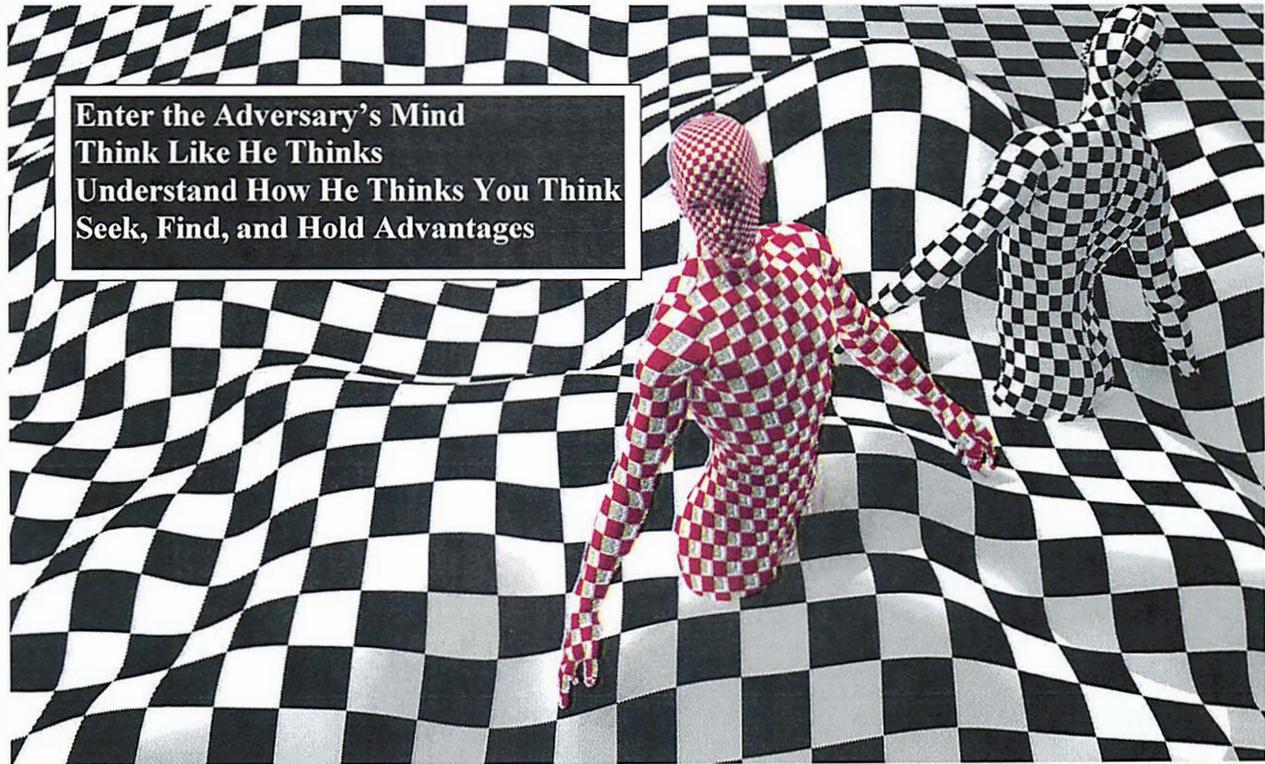


Figure 12. Wargame the Adversary's Wargaming

One could ask - Why should I endure this daunting mental task of wargaming my adversary's wargaming? It is a good question and worthy of a detailed response. Please allow me to explain.

⁴ T. E. Lawrence, *Seven Pillars of Wisdom* (New York: Anchor Books, 1991), 349.

- First, you can and should assume all human beings perform some kind of wargaming as they contemplate, prepare for action, and execute actions relating to *will*. Worthy adversaries always anticipate what their adversary would, would not, or could do in clashes of *will*. This acknowledge serves as a pillar when thinking about *will* in struggles over power, land, people, money, religion, and so forth.
- Second, we wargame our adversary's wargaming to attain one, two, or all seven advantages over our opponent. These seven advantages include: 1) initiative, 2) tempo, 3) momentum, 4) knowledge, 5) decision, 6) position, and 7) freedom of movement. Always remember: your adversary seeks advantages even while strengthening his own defenses to block your efforts to seek, find, and use these advantages against him.
- Third, mental combat places direct demands on contestants in battles over *will*. The demands of foremost importance push us to outthink the adversary and thus win in contests of *will*. Wargaming the adversary's wargaming helps us satisfy this demand. So, let's unpack this notion to gain a greater understanding of the intricacies of this phenomenon.

Wargaming the adversary's wargaming allows us to peer into our opponent's thought processes. This kind of wargaming enables us to think like our opponent thinks that we think, and to use this knowledge to our advantage. Such wargaming allows us to use our minds and machines to anticipate our opponent's actions. It allows us to anticipate and watch for his condition setting to set up his desired actions (stemming from imposition in the 14-element model of *will*) to succeed. He builds alternative sets of conditions partially for deception but partly to hedge his bets and act along the most successful branch of condition setting.

Condition setting involves taking the necessary preparatory steps for his actions to succeed. I peek into his planning allowing me to attack his plans at their inception. This once-over also permits me to search for and discover such condition setting and the juxtaposed, growing, spreading, and clutching vine-like links that connect the causes for actions to desired effects. Quite simply, wargaming the adversary's wargaming allows your decision-maker to possess options and opportunities to preempt the adversary's condition setting actions and thus 'shape' his desired effect. Preemption allows seizure of the always prized mental, emotional, or physical edge inbuilt with holding the initiative.

Now, back to a broader explanation of this kind of wargaming. To outthink an adversary, first understand his aim, goals, objectives, etc., and second plumb the depths of his thought and discern his plans to achieve these directional essentials in the conflict at hand. To outthink our adversaries through deep and rigorous thinking. We learn how he intends to confront the many and often daunting elements from the vagaries of operational contexts within which conflicts over *will* occur.

Know too - a talented enemy first imagines and then, through thought and action, resolves contextual impediments to his desired outcomes. Such resolutions involve affecting, perhaps even altering, the essential building blocks one finds in problem sets that he designs and uses to drive his strategies and tactics. Again, *think how he thinks* as he wargames. Use this knowledge to beat him and win in clashes of *will*.

Here is a thought model for a problem set. A problem set is a difficult problem that either has occurred or is anticipated to occur that has numerous subproblems that relate to the macro-

problem at hand. It shows numerous pressure points, perhaps even decisive points as places susceptible to attack and pressure and thus a direct input into the struggle for ascendancy of *will*. (Note, I discuss problem set in *The Power of Will In International Conflict* on pages 361-362.)

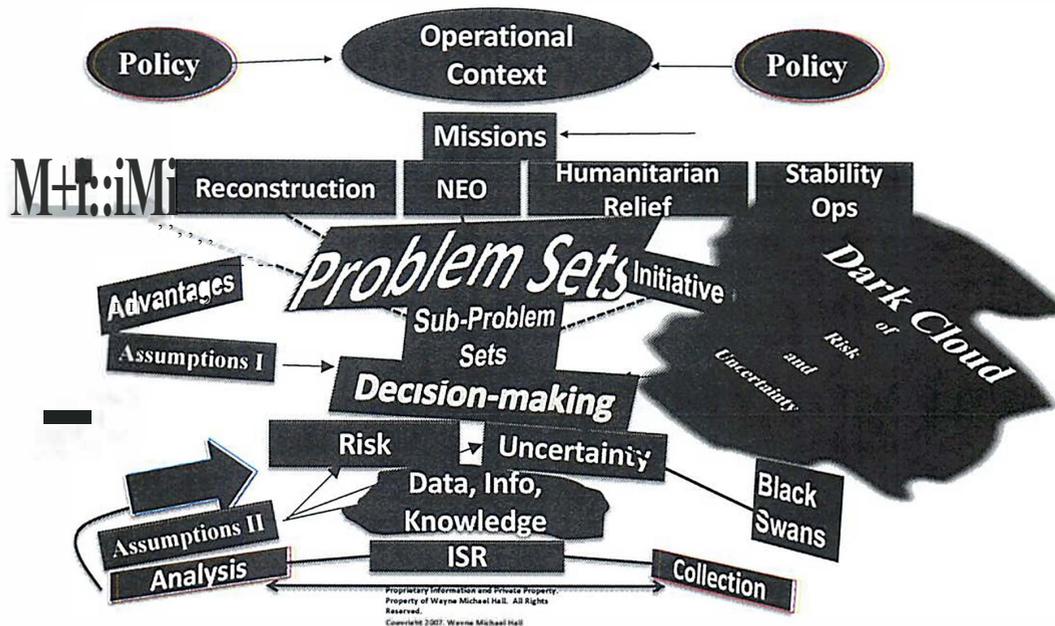


Figure 13. Problem Set

Ideally, in a fight, the thoughtful warrior on the defense seizes the initiative from the adversary before he acts. But how? To this end, a seemingly invisible but perceptible path into the adversary's concept of *will* appears in the minds of high-level thinkers. By identifying the most likely *causes to links to effects sequences*, high-level thinkers discover the important 'performances' the adversary must accomplish. As one performance, opponents must *evolve* via the act, assess, and adaptation cyclical modality of action. I know his goals must involve achieving optimal performance of his setup actions. As another approach, by interfering with my attacker's adaptation mechanisms, I cause the specter of sub-par performance to emerge in his mind. The attacker's anticipated results falls short because the opponent has interfered with this attacker's data gathering, vital for assessing action outcomes and adapting.

Let's think more on this line of thought but specific to offense and defense. An advantage comes to an opponent on defense by knowing how an attacker sets conditions for actions (causes) to links (human/social, functional, technical, organizational, thought) to outcomes (effects). With this knowledge, I understand how the attacking opponent defines success in plans and wargames. And, I use the comprehension and knowledge work to arrange the attacker's mind,⁵ and to shape his pre-conceived outcomes of actions as true, thus inevitable. The person on the defense seeks, locates, and affects the play, influence, and even sequence of the attacker's desires, life-force, purpose, strength of motive, and capabilities. Why? Because they signal the attacker's cause, link, and effect actions. It is necessary to anticipate not one but several cause to effect sequences because multiple potential causes (actions) can link to an effect. Watch for and

⁵ Ibid, 349.

discover the most likely (from the opponent's perspective) causes and links as they always stretch to join the effect in question. The defender anticipates, seeks, discovers, and tracks the moving parts of these cueing actions. With such thinking, opportunity appears; thus, the wise opponent imagines, seeks, finds, and grasps opportunities to preempt the adversary's actions in numerous places and times. He must visualize, seek, and grasp the best probability, out of many, to satisfy his purpose. From purpose and strength of motive, he eventually acts and thereby uses his capabilities to accomplish his aim, goals, and objectives.

Thus, I peer into the depth of my enemy's mind and stealthily enter therein. Once in place, I glimpse his logic, experiences, cultural shaping, views of the world, technical capabilities, communication, access to the Internet, morals, religion, values, education, influence of his supporting coterie, which helps him think and plan. This capability is so important that I submit learning how he thinks could be the *most important reason* for wargaming his wargaming.

Continuing, know this - he must wargame his options against whom he sees as his foe (us). I ask, what is his purpose? To this end, learn how he intends to satisfy his intent to learn about and anticipate possible outcomes emanating from his adversary's (our) act, react, and counteract actions. So, could he be wargaming our wargaming? Perhaps... But I equivocate. Thus, I say yes ... if he is smart, which I assure you our current and future enemies could very well be. In his wargaming, I catch sight of him playing out our conflict in a realistic operational context. I see him using artificial intelligence, perhaps even very smart, culturally knowledgeable and programmable entities (avatars) to act as us in his wargame. For now, though, let's assume that this sophisticated and very smart opponent yearns to employ an actual human or several humans to play his enemy in his wargaming. As such, I see him playing out the actions involved with accomplishing his aim, goals, objectives, strategies, tactics, and so on as the two forces collide. I realize that I'm susceptible to an accusation of mirror imaging here. Nonetheless, I want you to think about adversaries as smart as you - such is the person you have to outthink, or you lose!

As another interesting twist, I want you to know how your adversary thinks about battles. Along with traditional thoughts about battles, I propose other kinds of battles exist and they are equal in importance with the traditional view.

When you find yourself in constant wars of wits, think as your opponent thinks about the range of seemingly disparate battles appearing in fertile minds as competing *wills*, the clashes of each of the 14 critical element models, the ring and clatter of physical combat, and the complexity of mental combat occurring in the operational context housing our fight. Recognize curious phenomena that always appear in conflict, when elements of conflict, seeming disparate to even a casual observer, connect to one another and enfold smaller wholes or unfold into a unified and connected larger whole. More specifically, recognize this kind of thinking about his thinking as an important necessity in wargaming his wargaming. Now, let's delve into more specificity about battles. I'm speaking of the appearance and influence of 12 subsets of primary battles including:

-
1. battles of narratives,
 2. battles of advantages and disadvantages,
 3. battles of clashing thoughts,

4. battles of observed/observer relationships,
5. battles of intelligence systems,
6. battles of countering the adversary's data collection and analysis/synthesis,
7. battles of clashing objectives,
8. battles of quality and the struggle to keep quality sufficiently high against the adversary's efforts to pummel your criteria for judging quality,
9. battles of deception,
10. battles of life-force and resolve,
11. battles of sacrifice, and
12. battles of passion.

To wargame his wargaming, use a realistic process he would likely use. In such a process, locate a person well-versed in the adversary's culture to play the adversary in the wargaming (until we get the avatars I want). This person and his support elements design a plan to beat you, while he thinks like his adversary (you) thinks. This list can add many more elements, as I'm just giving you a few as examples.

- o This person has few scruples, restrictions via ROE, or moral inhibitions.
- o This person is smart, ruthless, capable, full of hatred, and dedicated to win or die.
- o This person or people will use a sequence of the 36 possible elements of how he thinks about himself and about you but in particular your: aim, goals, objectives, resources, constraints, strategies, tactics, **will**, the 14 element thought model of **will**, co-evolution, adaptation, time, risk, sweet spots of decision, condition setting, deception, 13 element 'how to think' model, strength of motive, duality and pendulum thinking, wargaming his wargaming, pressure points, decisive points, centers of gravity, observed and observer relationships, that which truly matters, 17 characteristics of nonlinearity, ISR, bias errors, logic errors and advantages, disadvantages the nonlinear operational context presents, Matrix War, and how he thinks you think that he thinks about these things.
- This sequence also involves:
 - o Addressing the specter of logic and bias errors,
 - o Assessing the quality of advice from the adversary's inner coterie,
 - o Visualizing the 13 element thought model that an actual adversary has to use as he plans, which includes: 1) perceive, 2) think, 3) plan, 4) decide, 5), act 6) assess, 7) design observables, 8) collect assessment data, 9) recompose data into information, 10) synthesize information into knowledge, 11) evaluate, 12) learn,

and 13) adapt. This model is peculiar in that it gives you insights into how he thinks and how he thinks you think.

- o Thinking as your adversary thinks about you with this thought model with many of the elements being obvious to what each side does. The trick is to anticipate and grasp what is occurring in your adversary's mind-what he thinks about, how he thinks about his picks, his worries, and the cause, link, effect sequencing that hint at which path he is proceeding on to outsmart us and thus set conditions to impose his *will*.

Now, let's review a few solutions coming to my adversary's mind as he chats with his inner mind. To guide thought, he copes with a series of admonitions and outright cautions his inner mind murmurs, such as:

- Attack enemy plans at their inception.
- Determine feasibility of actions before they happen.
- Know that the adversary must assess strengths and weaknesses of all sides from competing perspectives.
 - o Note: I call this activity riding the wild pendulum between opposing sides and finding a middle point in which you can see strengths and weakness from the viewpoint of each side and adapt your courses of action to win.
- Assess the nonlinear operational context and judge advantages and disadvantages relative to my foe's advantages and disadvantages in the turbulent context housing the clash of *wills* under consideration.
- Identify nonlinear characteristics of a particular context. Some show their leopard spots, while others remain hidden, chameleon like. I present 18 characteristics of nonlinear systems to work with from my book, *The Power of Will in International Conflict*. I want you to anticipate and judge the impact of in situ and moving or nascent nonlinear activities and assess the impact of their sudden appearance and influence on my operations as well as my adversary's.
- Assess the effectiveness of my intelligence system. I need to know how well it performs as it provides essential co-evolutionary assessment data from my actions, actions of my adversary, and from the appearance and influence of nonlinear system activity. I always seek to adapt faster and more effectively than my adversary. I always think as my adversary thinks, as he judges the quality of his intelligence, and calculates the quality of his adversary's efforts to assess, adapt, and co-evolve.
- Wargame my *will* against my adversary's *will*. Address some or all of the 14 elements that I tee up as critical elements in *will*. Do not forget the moral domain such as respecting and understanding passion, sacrifice, determination, and perseverance. Assess the feasibility of actions necessary to impose my commander's *will* on our adversary. Purposefully assess my foe's aim, goals, objectives, resources, constraints, strategies, tactics, *will*, pressure points, decisive points, centers of gravity, observer/observed relationships and so on. Assess the battle of intelligence systems, narratives, observed/observer relationships, deception, counterintelligence, and design counters. This point clearly connects to observer/observed relationships. This relationship is so

important for winning the intelligence and deception battles that its outcome could cause either victory or defeat.

- Actions to impose *will* often result in ferocious physical fights but setting conditions to win proves mental. Combatants cause mental condition setting to happen. It occurs prior to physical condition setting and before action. Causing an imposition to turn into action starts by assessing the friendly and enemy side's strength of motive and capabilities as a matter of dueling perspectives.
- Always arrive at a high-level of thought to attack your opponent's mind. Help in this matter comes from Sun Tzu who teaches 'a way' to proceed, with these words, "Thus, what is of supreme importance in war is to attack the enemy's strategy" and to "attack plans at their inception."⁶ I attack my enemy's plans and strategies at their inception. This effort involves thought to be successful. From this thinking, I must shape my opponent's mind to beat him at the inception of his thinking and planning. The question is how? Some answers come forth in my mind. First, I imagine how the adversary could attack and beat the friendly side from his perspective. Contestants on fields of strife always strive to anticipate, discover, and negate this action. Second, I defeat my side's plan from my perspective. This process yields insights into how the opponent could be thinking. Third, attack or manipulate how this opponent thinks he could defeat your plan and how he would accomplish this assertion. Given we know how he thinks he could beat our plan and I know how I would defeat the friendly plan, then, the friendly thought cabal (decision-maker, strategist, planner, intelligence analysts) can defeat their adversary's plans to defeat the friendly plans, even at their inception.
- Some elements of *will* may seem dormant, but they occasionally resurrect. Accordingly, opponents in battles of *will* seek to identify intangibles at play in battles, e.g., passion, sacrifice, perseverance, determination, etc. Intangibles sometimes appear, then fade, then appear, and fade again, only to stay well hidden. I seek to tame the adversary's elements of will by inducing decay to diminish select elements' strength, creating stasis in selected elements, retarding the rate of appearance, or arranging for disappearance.

Know well the elements of yet another way to 'see' and 'sense' your adversary's thinking processes. To get into the adversary's mind, identify and study the meaning of each process element. 'Enter' his skin and travel through his mind thus enabling you to see the world from his perspectives. I perform this trip in my book as I imagine what my hypothetical opponent's mind is like (see pages 329-330 and 356-357). This move enables you to approximate how he thinks.

- His critical thinking processes could include ever more detailed self-induced admonitions such as:
 - o Be detailed and specific in planning.
 - o Be wary; my enemy watches.
 - o Wargame my plan against a foe who represents my enemy's mind.
 - o Anticipate the appearance and outcomes of chance events.
 - o Develop flexible alternative plans to switch to upon friction's appearance.

⁶ Sun Tzu, *Sun Tzu and the Art of War*, trans. Samuel Griffith (New York: Oxford University Press, 1963), 77.

- o Induce change that I want via actions and be sure to synchronize.
- o Assess the effectiveness of my intelligence operations.
- o Find and attack my adversary's links connecting his causes to effects directly, through action, or indirectly via link decay.
- o Use multiple collectors to optimize my intelligence efforts.
- o Anticipate what he seeks with his intelligence systems. Show him what I want him to see.
- o Establish countersurveillance to deny the adversary access to my plans and intent.
- o Anticipate how the adversary could attempt to confuse or alter my co-evolutionary needs via deception and subterfuge.
- o Study how the adversary will attempt to alter your assessment data so as to confound my efforts to adapt.
- o Work the observed/observer relationship to my advantage-consider offsets and surveil them.
- o Leverage my advantages in a nonlinear context and minimize my disadvantages.
- o Attack my adversary's contextual advantages and accentuate his disadvantages.
- o Determine my adversary's pressure points, decisive points, and pressure points.
- o Be ahead of my adversary's efforts to attack or manipulate my pressure points, decisive points, and centers of gravity.
- o Consider disassembling my systems and processes and hide them throughout the chaotic cells of Matrix War.

It follows that wargaming our adversary's wargaming means you have to be in his head or 'in his skin,' as he works his way through each of the above requirements. As another thought, learn to think as he thinks and acts when he anticipates the mistakes you make via logic and bias errors. And you have to think as he thinks you think that he thinks you will be making logic and bias errors. Going even further, I want you to think how he will try to protect himself as he anticipates his own logic and bias errors that he thinks you could attempt to exploit.

- As you go along with him whilst he thinks and wargames, develop your adversary's intelligence requirements, counters, deceptive actions, soft spots in protecting his pressure points, decisive points, and centers of gravity. As he considers how you are thinking and acting, you will be with him by using my methodology. Into his mind you go as he develops his methods for imposing action to bring you to your knees. Realize that he thinks you will try to develop and enact counters to his actions. With this entree into his mind, you can learn enough to attack his plans at their inception.
- In the context housing the conflict, work on:
 - o identifying intelligence operations your adversary intends to employ. It is via recursion that you have the wherewithal to feed his co-evolutionary adaptation requirements with well-chosen data,

- o working through the obstacles and deceptive activity appearing in his mind to resist and shape how you think, plan, decide, act, assess, and adapt,
- o anticipating his wargaming of the ubiquitous game of observed/observer relationships,
- o anticipating his use of and belief in assumptions,
- o forecasting how he wargames his options relative to your options through cost and benefit, pluses and minuses, and any other comparative tools he might use,
- o conjecturing how you think he thinks about how you intend to overcome your proclivity to err via bias and logic errors,
- o identifying his possible ends, ways, and means to deceive,
- o forecasting how he wargames in a variety of situations,
- o anticipating how he could manipulate your wargaming outcomes such as deception,
- o foreseeing as looming probabilities the actions you could be taking that could negate all of his vignettes, and
- o deciding how he might come to defeat his own plans.

You now have a short explanation of this important notion. Wargaming the adversary's wargaming is one of the book's big ideas. Wise people should study this notion of wargaming the adversary's wargaming and improve upon my emergent thinking. I can see people following me as merging my wargaming of the adversary's wargaming theories with artificial intelligence, avatars, and synthetic environments. Also, I see people who follow me purposefully bringing in the power of one or more virtual knowledge environments (VKEs) and proceed to mass, maneuver, and swarm 8 things: 1) computers, 2) minds, 3) sensors, 4) data, 5) data conduits, 6) knowledge, 7) organizations, and 8) VKEs. I see such actions yielding actual effects (outcomes).

With the power of visualization, human minds and holistic thinking, reaching an intellectual high-ground, equipment, organizations, and automation, one day we'll replicate nonlinear contexts. I envisage people using artificial intelligence to design and employ synthetic contexts and avatar adversaries. The merger of mind and technology presents the capability to replicate chance appearances of random characteristics of nonlinearity, necessary problem sets, and avatar condition setting complete with links and effects. All of this man/machine capability can support our wargaming in a normal sense and in an extraordinary sense (Sun Tzu) while thinking about wargaming the adversary's wargaming. Awesome deterrents can spring forth from such replications. We can use these capabilities to neutralize any adversary, any time, any activity, in any domain and at any place.

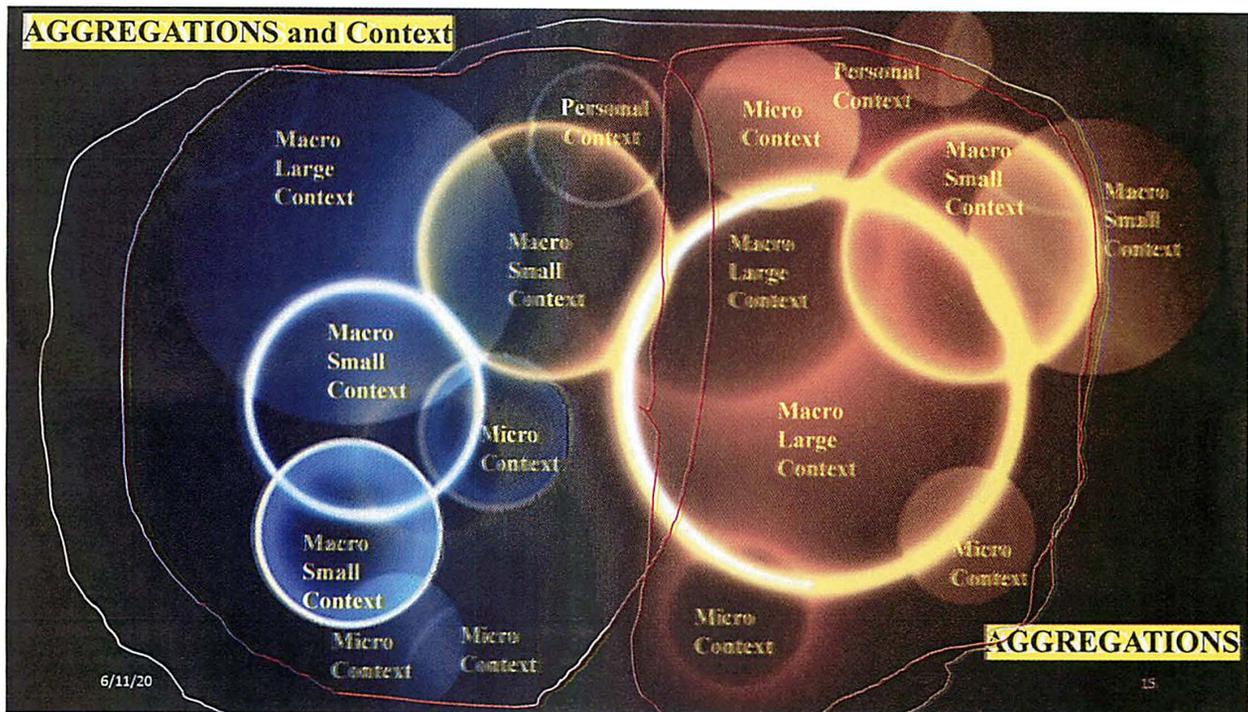


Figure 14. Operational Context

Now we'll move on to a short explanation of my thinking about the operational context. This explanation of context is the first of three visuals and explanations. All three prove vital in a discussion of *will* because the context is where fights over supremacy of *will* occur. This explanation of modern operational contexts is an addendum to what the United States Joint Staff calls the operational environment.

To start our inquiry, we need a definition. Here is the short definition of context and just a few broadening thoughts I use while thinking about context:

Context is the set of situational influencers that surround, permeate, and influence one's thinking, the aggregated thinking of organizations, and actions. Context enfolds the activities of a particular event, the arena of action, the place where an operation unfolds, and encases and influences contestants in a competition of *wills*. Context often shapes and infuses intensity in any situation. Context can constrain individual actions or groups and their collective thinking and actions.

Context is a sea of data whose depths and dimensions prove beyond what man can truly and fully know. Instead, a person's mind and their machines can know only parts of any context. Again, the context is important to our inquiry about *will* because of its direct influence on outcomes of clashes of *will*. The human mind picks up the fragments and aspects of the context with the function of gaining perspective and processing the data that reaches one's consciousness. Said minds, however, must be up to the task of deep thinking to enable what they seek in the sea of data to appear. Minds must be holistic and capable of synthesizing like and seemingly disparate people, organizations, machines, data, and the like.

Interestingly, contextual data that comes to people's minds can be noticeable or unnoticeable. Such data most often comes from the 'urging' of a mental framework guiding focused intelligence collections and then how the sifting, selecting, and storing of data occurs. A symbiosis of man and machine can passively ingest data, or purposefully seek data, find, and choose to work with. People, the sifters who work with machines to find valuable data, sometimes ignore data. This state leads the sifter to let data either continue to exist or send it to the refuse dump of unused or worthless data. Once found and 'digested' by the rational mind, the sifter has to remain wary about this discarded data because it can resurrect. The guarded view originates because of the value of said data. This data can appear dormant, even dead, lacking meaning for the time being.

Intellectual heft, machine work, patience, and strands (connecting what I seek with data appearing dead or of no particular value) prove essential in gaining an understanding, but gathered and sorted data is often fragmented and most regularly lacks meaning until thinking, through a synthesis of many minds, perhaps from a virtual knowledge environment (VKE), and massed machine work, turn data into information-I call this process recomposition. Incoming data can even be false because it is deceptive and planted by an adversary. Being wary is a way to acknowledge that the data people recognize as valuable is but a sliver of a constantly changing and shimmering 'whole' of the data coming and going into one's subconscious and occasionally making it into consciousness. We realize that most data comes to us through passive means via data absorption. But know that this data, for the most part, remains obscure and unnoticed. Remember.... context always provides data inputs-some that each side seeks and uses, discards, or stores, and some unwelcome but arriving anyway. Such inputs have significant potential for influencing opposing perspectives of contextual advantages and disadvantages peculiar to contesting entities.

The context provides constant data to all sides in a struggle over *will*. Some of the data is welcome, but some of it comes as a surprise and is therefore not welcome because it can cause problem and turbulence. The appearance of unwanted data can even set conditions for failure or at least is the cause for changes to one's thinking, planning, assumptions, and thus one's operations.

In our thinking about context, recognize and cope with the intermittent appearance of highly influential characteristics of nonlinear systems. We can cope with these characteristics with a nimble mind, nimble machines, and flexible organizations, as we know that in contexts housing conflicts complexity theory is always present and its appearances often come with great surprise at the wrong time and place. Friction, or unexpected chance events, presents an example of surprise at the wrong place and time. On a positive note, knowing, and recognizing data that announces nonlinear characteristic's appearance, and twisting these characteristics for our purposes can enhance success for imposing one's *will* or denying a competitors' impositions.

This view of the operational context influences how adversaries might think about themselves. Such influence could affect how your adversary thinks you think about influences of the context. Such influence requires that you study each side's susceptibility to vagaries of nonlinear systems at play in each context. Such influence causes one to be watchful and aware of the fluctuating status of the fight for advantage inherent to encounters of varying size and magnitude in any context.

We can conclude that while the operational context presents opportunities to seize and exploit an advantage, it remains fickle and flits back and forth in the twinkling of an eye. I want you to apprehend a new idea. That is, if we learn to reason similarly to our adversary and understand his contextual layers and how he receives and processes his self-sought and context-pushed data, we can start to comprehend the beckoning of an indirect approach into his mind.

Constant motion and change typify conflict contexts, hence the outcomes of operations. Humans and human-populated organizations move about, in and out, up and down in contexts, and they sometimes perform operations, actions, transactions, interactions, and behaviors. In doing so, they disturb the contextual universe. And operations occur in operational context. So, here is *The Power of Will In International Conflict's* definition of an operation:

... an organized and concerted activity involving a number of people, especially members of the military or law enforcement or competing people/organizations. An operation comes into action with aim, goals, objectives, resources, constraints, strategies, and so forth.

Turbulence also comes from the context by way of weather, bringing winds, thunderstorms, hail, rain, snow, ice, and so forth along with other natural phenomena such as, earthquakes, tsunamis, forest fires, and the like. Disturbances in contexts can be purposeful, such as the induced expulsions of energy that human and human-populated organizations and their functions cause and even their organizational communications and networks that connect and transact every second with other networks around the world. Data exchanges between computers cause ripples in seas of data. On a singular note even when one computer transmits and another receives this data, both transactions disturb the context. Whether big or small, expulsions or ripples of energy precede and accompany all disturbances. Of interest to our inquiry, consider this thought—all causes linking to effects disturb the context and in the associated wake leave physical and electronic traces. One can gather these traces and scrape them from the context to exploit them and thus enable high-quality intelligence analysis. It is intelligence analysis that searches for meaning in these vestiges of activities, transactions, interactions, and behaviors.

One can say with a high degree of surety that large parts of any context remain hidden. Part of context's opacity comes from a *veil of illusion that clouds all human eyes and minds.* I call it the Veil of Maya in my book of *will*. This veil of illusion succeeds in distorting and obscuring reality from machines, people's minds, and the combined minds of organizations. Illusions distort what our eyes see, and minds interpret, thereby causing a combined assault on our common senses owing to appeasing our dominating predilections to commit bias and logic errors, and to the power of the blinding or distorting influence of said illusions. It follows then, that when the veil of illusion is at work, it can cause the appearance and influence of a long string of logic and bias errors, or both, that either encourage bypassing what is occurring in the context or failing to see 'truth' while seeking meaning and relevance in the situation at hand.

Of further interest, as an adversary thinks about the operational context, a veil of illusion peculiar to him affects his thinking. So, you have to decide who 'him' is. What is at stake here is the veil of illusion and how it filters reality and affects how he thinks, decides, acts, assesses, evaluates subsequent data, and adapts. You understand what constitutes his veil and how it influences his penchant to commit logic and bias errors and subsequently affects his view of the operational context. Culture-influenced perceptions and subsequent thinking cause the

appearance of a strange and twisted view of reality identifying this curtain of illusion made of patterns coming from their backgrounds. Contestants come to prize and vie for this knowledge and composition of these patterns and how they stitch together because such knowledge opens a door of vulnerability for exploitation.

Sinking back into reality though, I, as a contestant in a game of *will*, can count on my opponent to err even though he might not admit it as a reality. In fact, all of us err, and in so doing, I'm counting on my adversary to come after my penchant to err and using the context to cloak their assault. Just imagine how quickly anyone can distort what they see, hear, perceive, sense, touch, smell, or intuit and not recognize the affectation that could come with such erring. All humans prove guilty in recognizing the culprit that causes the distortion ... it is none other than their particular veil of illusion.

From yet another view, such distortion can come without the person making the error being aware of the distortion the veil causes. Again, I'm identifying a vulnerability. The wise person seeks, finds, and knows the causation of illusion in their opponent's sight and mind, how it affects his thinking, and its influence on his decisions. Of course, the antipode holds true too. That is, the adversary could very well seek your veil or mine and try to influence our thinking and decision-making. Watch for actions suggesting an onslaught against your veil of illusion, find his efforts, and twist them to your advantages.

Now, let's move on to more discussion of contexts and pick up our thinking about aggregations. My view of the operational context fits with the wonders of aggregation theory and its enfolding and unfolding characteristics. We must start our inquiry into aggregation theory with two meaningful definitions to answer two questions, both a brief review of some definitions that came earlier in this missive. So, I ask: What is an aggregate? What is an aggregation? The definition of aggregate is:

One complex adaptive system, heretofore known as CAS kluging with another and bonding via glue (which holds similar and dissimilar aggregates together); when more than one aggregate conjoins, one finds an aggregation.

The definition of aggregation is:

Gathering and bonding separate aggregates into a larger whole. This whole is collective and responsive to accepting more like and disparate entities into its boundaries.

As aggregate and aggregation occur, knowing their natures is important to our understanding of the context housing struggles for ascendancy of *will*. I continue my explanation by stating something that should be obvious by now. That is, when I add one aggregate with another aggregate, *voila*, I find an aggregation. While simple, this statement proves important to understand context. Aggregations, with their growth, and their disbandment, always form and influence in contexts experiencing action coming from one or more opponents. And, the complexity of aggregations grows when we recognize the activities brought about by the play of nonlinear systems, such as friction, nonadditivity, difficulty in seeing causes linking to effects, and so on.

Aggregations can cause unexpected consequences. Some aggregations move, and thereby cause sensitive variables to assemble, conjoin, and change as though an ignition has occurred.

Some aggregations have velocity, mass, movement, and direction. They can rapidly form, grow, and move, enfolding smaller aggregations and unfolding into ever larger aggregations. They can wreak havoc on any operation or turn good intentions into a firestorm. If they prove to be cloaked as such, they appear and disappear. Interestingly, aggregations influence the operational contexts hosting battles of *will*, by being and not being—that is, appearance and influence of the null is a distinct possibility.

Complex adaptive systems (CAS) live in and operate in the operational context. They compete with one another; they try to use the context to their advantage; and each CAS tries to spray disadvantages on their competitor. In my book, CAS include people and people-populated organizations. They compete via co-evolution in which they: act, assess their action, collect assessment data, think about it via synthesis, evaluate, learn, and adapt. All of this takes place for each CAS living normal lives; but more to our interest, CAS use this process when competing and under pressure to adapt faster and better than their adversary. It is this process and its entangled intricacies that cause co-evolution and adaptation to be both strength and weakness. In my book, I propose that it is a wise competitor who anticipates their adversary's attempts to attack their adaptation system while his co-evolution and adaptation systems prove vulnerable to attack even when I'm faced with the reality that he watches me for such actions. As an example, I imagine an adversary CAS who competes with me for dominance of *wills*. I intend to seek, find, understand, and attack the adversary's co-evolution and adaptation processes. My intent travels further into the morass that is co-evolution and I attack the most important aspect of adaptation—I manipulate the data my opponent's assessment system gathers and that he uses to adapt. I attack, manipulate, or impregnate his data recursion with bad data as my weapon of choice. In so doing, I'm affecting the data that his recursion processes, gathers, and presents and thus I'm manipulating his adaptation.

The Power of Will in International Conflicts and its theory about context involve four kinds of contexts that combine, live with, and live within one another for an indeterminant time. Remember, one CAS is an aggregate, two CAS an aggregation, one aggregation plus another aggregation is a larger aggregation. Human beings need to engage their minds in synthesis and holistic thinking to sense, see, feel, and judge various contexts coming to us or that we are moving in, about, or within.

The contexts of our inquiry can be permanent, semi-permanent, partially fluid, fluid, micro-contexts, and macro-contexts as each enfolds and unfolds within our contextual schema. Context may be physical or nonphysical, tangible or intangible, visible or invisible, symmetrical or asymmetrical, harmonious or inharmonious, odorous or nonodorous, noisy or silent and so on. Our individual context, aggregates, and aggregations live within and move about in these four contexts that we are discussing. Please place your attention on the following visual. In it, I'm describing four related contexts at play in any conflict operational context 1) one's personal context, 2) a micro-context, 3) a small-macro context, and 4) a large macro-context.



Figure 15. Aggregations and Context

These contexts exist within and move about in and out of our individual and collective consciousness and subconsciousness. The more sensitive we become to such movements; the more advantages appear where none previously existed in our conscious minds.

Culture drivers and shapers influence contexts. For example, in cities, a relevant operational contextual feature is infrastructure and its many linear systems such as distribution arteries and centers, hospitals, icons, religious edifices, museums, schools, street cars, trains, subways, water taxis, emergency rooms, highways, bridges, railroads, and so on. You get the picture.

Now, please allow me to proceed further with these ideas. If more than one CAS joins for a mission, say a task or a social outing, the single CAS and its individual context conjoins with other CAS and their individual contexts. Thus, they form an aggregate, which is a micro-context. If two or more aggregates conjoin, an aggregation of CAS and their contexts are enclosed in a larger operational context (operational because said people have a purpose for congregating and performing some action/activity that requires an operation of some kind). This is a macro-small context. When two macro-small contexts conjoin, one finds a macro-large context. We know that a larger context always exists around their smaller bubbles, as individuals, aggregates, or aggregations, as described. They knowingly connect with the micro- and macro-context in which they exist and that exist about them.

Let's quickly review. In the general context, one finds:

- 1) Individual context. I consider individual contexts as membranes with an outer texture of contexts that surround and influence organisms existing within the operational context.
- 2) Micro-context is larger than the individual context and contains at least two individual contexts.

- 3) Macro-small context is, of course, larger than the micro-context and contains two or more micro-contexts.
- 4) Macro-large context is larger than the macro-small context and contains at least two or more macro-small contexts.

Of note, these four contexts contain the actors and their organizations who struggle for triumph of their *wills* on opposing actors and their organizations. The actors, of course, are CAS. An operational context contains countless striving and counter-striving CASs and CAS-populated organizations. In any conflict, context is neutral and open to each competing CAS for manipulation, decay, or neutralizing. Thus, a context presents opportunity, but it also secretes misfortune. To find or create advantage, one imagines how their competitor experiences a decision, co-evolution, and adaptation process with one, two, or all 13 parts at work-perceive, think, plan, decide, act, assess, prepare observables, collect, turn gathered data into information, synthesize information into knowledge, evaluate, learn, and adapt. One must know how their adversary ruminates about this thought and decision process relative to his personal context and his larger context. They also have to consider how he senses his adversary's decision process (which of the 13 elements are at work) context from this person's or organization's view. These brainy functions appear and exert influence as I wargame my adversary's wargaming.

Sometimes an actor on the stage of conflict becomes aggressive and disturbs the universe to make use of subsequent turbulence, change, and chaos to create and seize advantages from the operational context itself. Potential advantages include-initiative, tempo, momentum, knowledge, decision, position, and freedom of movement. Any side in competition struggles to find or create advantages in an operational context. The self remains supreme, and CAS engage in struggles to achieve advantages for themselves. At the same time, they attack or manipulate their adversaries with the intention of causing disadvantages to appear and influence them. While the ascendancy of clashing *wills* reigns supreme, I assume that all sides know the importance of winning the struggle for contextual advantage.

Let's examine another angle of context. That is, variables live in the operational context. Variables can appear and cause perturbation. But they often remain dormant. Then with the right combinations of other variables or changes coming with events or actions in the context, they can become powerful aggregates and aggregations, e.g. riots, forest fires, legislative aggregations occurring not for reason but to join the bandwagon or join the Pied Piper. Unpredictability constitutes the only truth. Certainty can never be known because of chaos with its predilection to bring change and the turbulence of chaos, a habitual tenant in nonlinear systems. When variables turn sensitive, they influence and cause change. They cause perturbation and inject either fortune or misfortune into one side or the other or to all participants. The presence and influence of sensitive variables preside and govern. They always prove present and at play in fights over *will* and the wise warrior knows well that they influence outcomes. Opportunities to seize advantage can appear but the moment passes quickly. Thus, you must be intellectually agile and willing to act quickly, regardless of risk, to grasp a fleeting opportunity and use it for advantage in struggles of *will*.

I want you to consider and remember a few points. Each should be influencing your thinking by now. That is to say,

- 1) View context as a series of ever-increasing or ever-decreasing sizes. The context unfolds into larger bubbles or enfolds smaller bubbles of context.

- 2) In the field of conflict and competition, a large macro-context houses any conflict, competitive event, or bartering activity.
- 3) A macro-context can accept smaller mobile contexts that might be passing through, staying, passing over, or becoming stationary instead of being mobile.
- 4) Always wargame your actions relative to the context. Additionally, wargame your adversary's wargaming about the operational context and know how it shows advantages and disadvantages to all opponents through their eyes and minds.
- 5) As an addendum, I ask you to answer a few rhetorical questions:
 - a. What constitutes the main points about operational context housing people in conflict that you should consider in your thinking and decision-making?
 - b. What are my advantages and disadvantage coming from the context?
 - c. What are my adversary's advantages and disadvantages coming from the context?
 - d. How does the adversary think I think about my advantages and disadvantages coming from the context?
 - e. How does the adversary think I think he thinks about advantages and disadvantages the context presents to each side in a conflict?
 - f. What does an adversary consider as he mulls over how his enemy decision-maker thinks relative to finding and exploiting advantages and disadvantages in the operational context?
 - g. What characteristics of nonlinearity could be at play and how must I prepare for them to appear and to wreak havoc?
 - h. Am I prepared for contextual data inputs that could be welcome or unwelcomed?
 - i. Am I viewing the operational context as comprised of four types of context with CAS as occupants that this discussion presents?

I close this discussion with the following thoughts. In my world, nothing is easy. Our work with aggregations and context is one of the most difficult concepts in the book. But we cannot flinch owing to abstraction or difficulty. We shall persevere! It takes synthesis and holism to be proficient in this thinking. Chapter 4 in *The Power of Will* provides much deeper thinking about the subject of operational contexts.

Non-additive	Turbulence and Change	Importance of Context	Difficulty in finding causes for effects	Friction	Randomness
Observed and Observer Relationship	Co-evolution	Adaptation	Presence and Influence of CAS	Presence and Influence of Sensitive Variables	Presence and Influence of Entanglement
Sensitive Dependence on Initial Conditions	Small Inputs Can Lead to Large Outputs	Presence and Influence of Aggregations	Edge of Chaos	Presence and Influence of Tendencies	Presence and Influence of Untidy Rules

Table 2. 18 Characteristics of Nonlinearity

Nonlinear systems can cause troubles because they can bring turbulence and change. Or, they can help competitors achieve advantages or cause them to be susceptible to disadvantages. In my work, I have concluded that nonlinear means, in a working definition:

The study of situations where, in a general sense cause and effect are not proportional to each other. That is, small causes can bring forth enormous and uncontrolled effects. The mere reference of 'nonlinear' implies the presence of an operational context replete with turbulence and change. It is a study of situations in which precise prediction is impossible, causes for effects difficult, aggregates and aggregations reign supreme, and complex adaptive systems play, co-evolving and adapting. Nonlinear contexts involve sensitive dependence on initial conditions thus creating the presence and influence of errors, which cause more errors.

The definition suggests the presence of a certain peculiarity when dealing with nonlinear systems and their influence on actions and counteractions in an operational context. I have thought about this strangeness, as the definition suggests, for years. Over time, I developed the 18 characteristics you see on the visual above. All of us need to use this list of features and understand each element to prepare for the appearance and influence of one, two, or many of them. As an example, one of the most important characteristics is - I must acknowledge the persistent appearance of turbulence and change in any operational context housing fights over *will*. While the phrase sounds simple, it is complicated. With turbulence and change, facts might

not be facts, truth changes, assumptions can prove to be wrong, plans can prove defunct, surprise comes forth and influences, small inputs can cause catastrophic outcomes, and unexpected chance events wreak havoc for any force attempting any activity.

Let's further explore a few of the characteristics on the visual. Interestingly, Clausewitz in *On War* discussed nonlinearity in his words and in his descriptions. For example, Clausewitz discusses friction, randomness, chance, and falsity of information.

Everything in war is very simple, but the simplest thing is difficult ... Countless minor incidents--the kind you can never really foresee--combine to lower the general level of performance so that one always falls far short of the intended goal. .. Friction is the only concept that more or less corresponds to the factors that distinguish real war from war on paper.⁷

- Clausewitz goes on to say,

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.⁸

As we descend deeper into this subject of nonlinearity, ponder some of these important characteristics relative to our discussion of operational context. To win in contests of *will*, our minds and organizations have to be intellectually and structurally capable of dealing with unexpected chance events, friction in Clausewitz's thinking; friction is random, but I know it occurs during fights in various operational contexts. These events come forth, often with surprise, because of the machinations of nonlinearity and, of course, man-induced changes coming as a result of co-evolution and adaptation. I call these changes and happenings, *vagaries of the operational context*.

Important to our inquiry, we discover, while plumbing the depths of change and turbulence inherent to nonlinear contexts, the culprit of these changes is nonlinear vagaries. They erupt and cause constant interference, and unpredictability comingling with the actions of man and their organizations who strive to impose their *will* on their adversary. For the sake of argument let's say we find a conflict over imposition and denial of *will*. The collision of resisting forces occurs and energy bursts, affecting each side physically, mentally, and emotionally. And, each side collides with contextual elements. Laying in hiding another sort of collision occurs that affects each side in the fight. That is, each competing elements can collide with one, two, or all 18 characteristics of nonlinear systems. Thus, count on uncertainty, friction, random events, irruptions, small inputs leading to large outputs, sensitive dependence on initial conditions leading to compounding errors in estimating change and turbulence, aggregations, and so forth.

As you can see on the visual above, I use these characteristics of nonlinearity to help me think about the operational context and my struggles with foes. Undoubtedly you can add more

⁷ Clausewitz, 119.

⁸ Ibid, 120.

characteristics to my list. For example, at one time my list consisted of 42 characteristics. The list proved unwieldy; thus, I trimmed it and now work with 18 characteristics. Be aware though, your minds can and should add more considerations to this list as you experience a life filled with conflicts of *wills*. Please understand, these characteristics never activate at any one time. But know well, their appearance, their entree into the lives and times of people and people-populated organizations, greatly influence all happenings in any conflict over *will*. This influence comes via turbulence, change, friction, and random events, as I mentioned above. As a participant in the challenges of living, you realize that neither man nor machine can accurately predict these happenings because events occur and prove totally unexpected. Such events cause great stress and storm for people, organizations, and populations doubly clutched by battles of *wills* and unpredictable but so highly influential operational contexts.

In any active operational context, you will always find battling people, their organizations and machines in states of frenzy, and the buzz of constantly moving and sometimes swarming data. All people, machines, and organizations thus caught up in conflicts of *will* find themselves snagged by complex operational contexts. They suffer from the arbitrary appearance and influence of these characteristics. One does sense the rumblings of change and turbulence and change proves highly influential. Occasionally contestants on the field of strife find truth to be false, black to be white, wrong to be right, and data to be both false and true. And, the interaction of opposites always makes its appearance, and it proves alive, well, and influential in any operational context. Because the context houses the necessary ingredients to simmer a recipe of chance, contestants in battles of *will* realize it would behoove them to give the operations context attention, indeed observance and study. For the context is also home to variables like pent up emotion and resentment. Consider the distrust of law enforcement smoldered for years and suddenly exploded in the Los Angeles riots in 1992. With these ingredients cooking in the context for several years, all it took for the variables to become sensitive was an acquittal of the police on trial after a brutal beating of Rodney King was caught on video camera. This acquittal and the confined and explosive hatred for the Los Angeles police ignited the underlying sensitive variables (perceptions of racism, degree of control over seething animus, penchant to vent via looting, while balancing on a precipice between order and disorder). Some of these sensitive variables became highly influential. They ignited the potential for the appearance and influence of a plethora of unintended consequences.

What we saw was aggregation theory in its raw and powerful state of being; how this theory played out had a huge influence on the riots, beatings, looting, destruction of personal property, and fires. And, we saw failed attempts to stop the riot, which could not overcome the huge aggregation that was the riot in motion. If the lurking variables had been identified and worked with before the judicial decision, the riot might have been averted. In retrospect case, with this case study we can see the lurking variables, how they became sensitive, their ignition, how propellant caused aggregates and aggregations to congeal and move, and how all of the above served as the glue that held the aggregates together into a whole that could not be dispersed. The authorities had to leave the conflagration alone to burn out with time.

My point in this discussion is, in nonlinear contexts, small inputs can lead to unexpectedly large outputs. Therefore, search the context for variables that could become sensitive, watch for them, and intercede as necessary to keep them from becoming sensitive. You

want to aggressively set conditions to intervene with the growth of potential problems before they become too big to stop.

In such a context, players on the stage of strife know, with a sinking sense of dread, of the presence and potential influence of randomness. Random means arbitrary. Random happenings come to human beings as whimsical, capricious, and oh so difficult to deal with. Yet such events happen during contests of *will* owing to the characteristics of nonlinearity, the presence and influence of such constants of inconsistency as weather, and the presence and inputs into the context of humans and their organizations and machines disturbing the universe that is the operational context and reaping a crop of turbulence and change.

Also, I might add, CAS live and compete in the operational context. Aspects of nonlinear systems also 'live' in this context. Their characteristics seem alive and prove to be vibrant in some cases. Interestingly, other characteristics lie dormant, and seem to be waiting for their chance to come alive and influence. They can influence any actions within an operational context. Please recall that CAS involve people and people-populated organizations.

Dynamic network of many agents (which may represent cells, species, individuals, firms, nations) acting in parallel, constantly acting and reacting to what the other agents are doing. This definition comes from Mitchell Waldrop's book, *Complexity*.⁹

CAS comprise aggregations. Aggregations can grow and grow into one or more huge aggregations with hundreds of CAS bonding. The outcome of aggregation bonding means when we compete in the operational context, we make a sensational discovery—a conjoining of like and disparate people, organizations, and their equipment—all coming together, all bonding with impermeable glue, a structure where all the pieces matter, leading to wholes greater than the sums of their parts. Aggregations thus bear watching as the whole of the aggregation or even a small aggregation of CAS can prove to be one of the variables with the potential to be sensitive and thus influential to other aggregations. Aggregations influence via the appearance and activation of several characteristics of nonlinearity, with one being small inputs can lead to unexpectedly large outputs, a second being sensitive dependence on initial conditions (meaning small mistakes always happen thus potentially causing exponentially large and unpredictable outcomes), three, the presence and influence of CAS, and four, the presence and influence of aggregations and aggregation theory.

Aggregations sometimes become unexpectedly large growths of people, equipment, organizations, thoughts, social media, and so forth. It is no wonder that contestants in the conflict over the superiority of *will* become star struck when bad things start to happen and cascade, out of control, as if guided by an invisible hand. At such times, contestants find their plans, actions, and operations to disappear in a whiff, leaving only vestiges of their former presence. Their plans to impose their *will* on another resisting entity must change ... often rapidly. In such dangerous

⁹ The definition, a compendium of thoughts and descriptions, entered my mind when I synthesized the work of John Holland, as cited by M. Mitchell Waldrop, *Complexity* (New York: A Touchstone Book, 1992), 169, 251-262, and from Holland himself in John Holland, *Hidden Order* (New York: Basic Books, 1995), 4-12.

contexts, success goes to the side with the best leadership, the most agile minds, and the best agility of organizations and machines.

All CAS live through continuous cycles of co-evolution. Co-evolution means:

The evolution of two or more species or organisms (natural or man-made) that interact closely with one another, with each adapting to changes in the other(s). Note all CAS must and do co-evolve. In the logic of the book, CAS use this thought model to thrive or die-act, assess action, design assessment observables, collect assessment data, turn data into information and information into knowledge, evaluate, learn, and adapt.

This means that organisms, which I call CAS, living or acting in the operational context, interact and compete with one another, with each assessing and adapting to their competitor's variations. All CAS co-evolve and adapt or die. Co-evolving CAS always follow the sequence I just described to successfully co-evolve and adapt. Nonetheless, a battle of the quality of this cycle rages in all areas of the contextual battle bubble. Those who perform the fastest and the best always have an open door to the seven advantages we have been talking about. The CAS that perform the worst shall die or wither in obscurity. It follows that this sequence has two faces. The first face allows for viewing the context, their opponents, and vigilant, watching for their opponents reaction to their action. With practice, a CAS can assess, learn, and adapt faster and better than the adversary. The second face though opens a door of vulnerability. That is to say, assessment and evaluation of incoming data prove vulnerable to injections of falsity, repudiation questions, speciousness, authenticity, veracity, manipulation, heavily laced with emotive traces designed to fire up emotions and thus open yet another door heretofore keeping bias and logic errors at bay, but now rushing in to influence minds.

As the next step, we shall engage in deep thinking about the role of culture as it affects CAS rules and models of action such as how cultural rules affect a combatant CAS's assessment of the context and its adversaries.

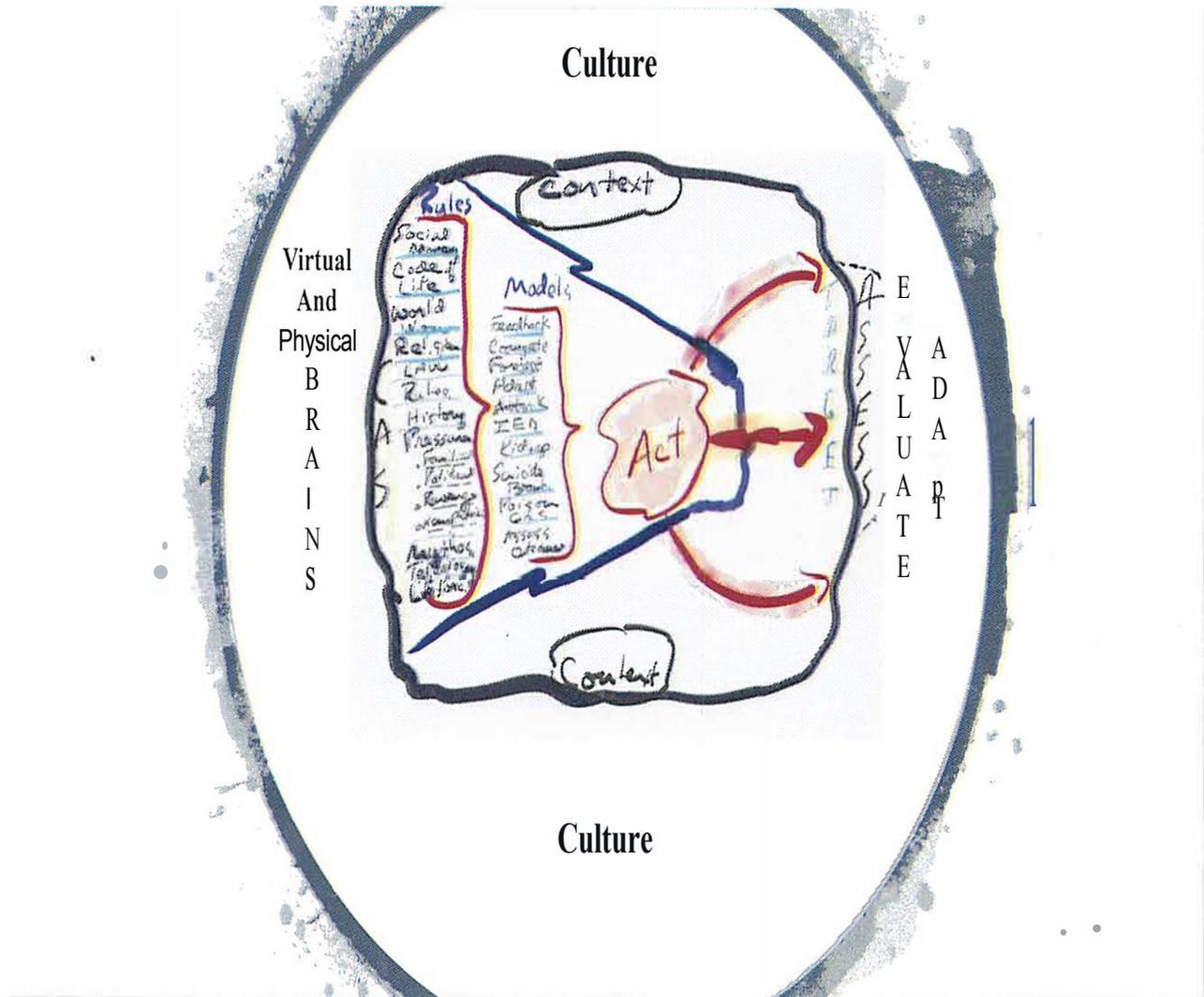


Figure 16. Role of Culture on Complex Adaptive Systems

Truths prove sensitive to change during clashes of *wills* in any operational context. Fights between unpredictable human beings and the presence and actuating of randomness from nonlinear systems and the ever unpredictable clashes of human beings and their organizations over the dominance of *wills* cause a certain fragility of the foundation leading people to believe what they hear, see, sense to be true or false. This basis for belief is susceptible to a crumpling effect --even the best human minds find it difficult to discover truths and facts from sought, incoming, and in situ data. Evidence supporting truths that contribute to the veracity of fact proves difficult in a turbulent and changing context. Why?

Data is the starting point, the basis for discerning truth. Data flows through computers that sift through masses of data via filters determined and shaped by models, software, correlation, connectedness, validity of source (non-repudiation), visualization, artificial intelligence, and many other automated tools, and, of course, the human mind with its predilections and needs. Trouble comes when data come as too much, too fast, some as false and

some as true data, information, or knowledge, repudiation processes, specious thinking adhering to truth but in reality originating from false or corrupted data, misinformation, disinformation, deceptive data, altered assessment data ... Truth, the basis for fact, become questionable when people argue over the validity of claims, evidence, truth, and fact.

Often veracity serves as the basis of belief for believing evidence, truth, and fact. But this logical process can collide with the human tendency that causes submission to the entwining powers of thought, emotions, and self-interest. These three aspects of human life-thought, emotion, and self-interest-always wend their way back to culture. Cultural and its influence on rule-based conditioning come to dominate action models residing in the minds of human beings and their organizations in peace and war. The rules guiding action models, e.g., the assessment model in a CAS, prove to be part active (such as tasking ISR) and part passive (receiving random data inputs from the operational context). Culture shapes the rules. The rules reside in the minds and machines of people and influence how people perceive, think, plan, decide, act, assess, gather assessment data, synthesize, evaluate, learn, share, and adapt. Culture then proves to be a vanguard that adversaries lean upon, whether consciously or not. More specifically, in a contest of *wills*, truths form regardless of the problems I mention above. Colliding CAS, co-evolution, and adaptations shape truth's many forms thanks to recursion and changing plans from the recursive data as recipients think on and act on the new data.

Truth balances and shifts on unstable, shifting tectonic plates. These plates shift with turbulence and change, clashes between unpredictable foes (moral and physical domains), and data's uneven origin and flows involving both purposeful data collection and flows coming from unexpected, context-produced data. Keep in mind this omnipresent fluxuation of perceived truth, its relation to either believing or not believing its source of veracity, and the subsequent belief in the reliability of evidence claimed to underlay truth. This claim of truth's linkage to the veracity of facts does not prove believable if truth's lineage is tarnished or mangled. Truth and its origins and ways of explanation influence how people think to be true and false regardless of reality owing to culture's invisible, heavy hand.

Now, let's ponder what guides and controls CAS and their constant adaptation. Within each colliding CAS one finds a variety of action models that shape its nature as it strikes its target and deals with the aftermath of said action. Actions create outcomes; they sometimes prove kinetic, sometimes emotional, sometimes cognitive, and sometimes a combination of all three. An action shoots out from an imposition; its level of success is important in winning a contest of *will*. Said another way, an action is a cause, which links to an effect. Most often, in conflict, many causes (actions) exist and come into play to create one or more effects (outcomes). A foundation for each cause (action) exists. From the foundation comes a CAS's models for action. For example, a model for action could be a suicide bombing or a missile firing. Other models of action could involve intelligence collection, reconnaissance in force, cyber-attacks or defenses, a patrol or an air strike, or a cruise missile firing from a ship.

But wait, something provides the basis for guiding each action model. At the core of the impose-act-assess-adapt train of thought the thinker finds a plethora of cultural rules, some simple, some complicated. They surround and influence each action model. A variety of cultural rules exist. They shape the nature of, guide, constrain, and control the models that discharge CAS actions. It is within the models' guiding rules that one finds an understanding of this

particular *will*'s purpose, strength of motive, and capability selection. A deep thinking person views this peek into the engines of *will* as invaluable.

While many things in a culture change, cultural rules governing behavior, punishment, death, birth, marriage, religion, and so forth seem stable. But even stable cultural rules bend and sometimes snap with the winds of change coming with chaos in nonlinear operational contexts. The seeds of adaptation hibernate in the soil of any disagreement or contest of *will*, regardless of the entity's propensity to resist change. Disturbances in any operational context happen with impositions of *will* via actions, reactions to attempted imposition actions, and from CAS and their co-evolution activities. Keep the 18 characteristics of nonlinearity in mind, such as friction, randomness, presence and influence of sensitive variables, importance of context, and so forth.

Five forces drive CAS actions.

- o First, CAS must act, assess, collect assessment data, evaluate the data, learn, and adapt. Thus, action and adaptation must occur to survive or to accomplish aims, goals, and objectives. CAS have rules that account for demands that they co-evolve and adapt.
- o Second, rules drive, guide, and constrain the activities of CAS. A rule for our purposes is,

A principle or structure of behavioral code governing and influencing the models that shape actions; guidance that governs, binds, influences, and leads models to direct CAS actions that may, in turn, impose one CAS's *will* on another.

- o Third, rules guide and influence action models leading to particular kinds of actions, assessment, aftermath activities, and adaptation activities. This process lives and thrives in the lives of human beings everywhere. We do not, however, take the time or possess the imaginative thinking skills to consider its heavy hand and presence in our lives. Our adversary's intelligence system provides the data to guide the rule-driven action model and the design of its strokes to impose one's *will* on the right spot at the right time with the right force to achieve the right effect. And, of course, this intelligence system provides assessment, evaluation, and adaptation conclusion recommendations. It should be clear by now that the adversary's co-evolution and adaptation system should be a first priority target in any struggle of *wills*.
- o Fourth, CAS rules and models prove susceptible to data's influence as it streams from the operational context in two ways-wanted and unwanted. When people require data, rules shape requirements, rules select and shape action models that purposefully direct data gathering via intelligence collection. Alas, the context sometimes imposes unwanted and unexpected large tranches of data, often at the worst possible time. Sometimes this input into decision-cycles affects the overall

well-being of CAS. If recipients of such data are not inured to this kind and number of surprises they could fail.

- o Fifth, a consistency of data inputs always appears and influences the outcomes of actions and outcomes. The consistency involves two broad categories-arrival of sought and unwanted data. Both types provide the wherewithal to adapt with the intention of being faster and of higher quality outcomes than any adversary.

Cultural rules influence the following: rules dictate the connectedness you see as my four kinds of context merge, (e.g., individual, mini-individual, macro-small, and macro-large). Rules dictate the kind of action a CAS takes. Decision-makers, planning people, and operations people implement *will* via cultural rules and action models. Rules guide how people perceive, think, plan, etc. Rules dictate belief of what is true and false. Rules guide people in determining the veracity of proposed facts. Rules and action models guide how a CAS selects and launches an action, assesses outcomes, evaluates collected data, learns, and adapts.

Continuing along this line of thought, rules govern how people think-good and bad. Thus, as an implementing 'rule' first identify the adversary's cultural rules. Then, affect the rules, and know with such dabbling you could change the way people think. If you can feed data to a rule-driven CAS assessment and adaptation system, you can affect outcomes of a person's thinking.

Take a moment and consider the power of cultural rules. They serve as the basis for 'how to think' about a requirement, how to select kinds of incoming data, and with its gathering and presentation, attribute meaning, and evaluate its veracity and usefulness to the problem at hand. This powerful mental activity applies meaning as data transforms into information via recomposition. This is a man and machine process at the start of the transformation. Rules dictate needs to action models that filter actions' results/outputs when information transforms into knowledge via synthesis. The winning CAS in conflict does a better job in assessing actions, evaluating incoming data, learning by sharing, and adapting faster and better than an adversary. Because of their influence on the entire process of co-evolution, CAS rules and action models present a high-value target for either manipulation or assault.

To assault or defend against assaults on one's thought processes, I want you to understand the context prior to, during, and after engaging an opponent in a battle of *wills*. In the same breath, I want you to influence your adversary's views of context. To do so, know his culture and its effects on this opponent's thinking before trying to achieve this outcome. Know too, in any modern operational contexts, change agents masquerade as the elements of chaos, disturbances, and changes. They rise and achieve a high degree of protection from people cloaked, indeed smothered in many cases, in cultural-laden systems of beliefs and values. Such influence provides opportunities to use culture to gain advantages.

With a changing context, probabilities appear and disappear. Cultural rules shape the probability you select from the many that appear. One probability seeks and changes an adversary's influential rules. Such rules, as you recall, guide action models directing a strike and evaluative outcomes from assessment data. Some rules can lead to advantages and disadvantages. Thus, be careful about your choices for affecting your adversary's choice of the

right probability and thus improve the odds of working against a probability you prepare for while avoiding unwanted outcomes.

On the other hand, affecting long-standing rules proves difficult, and extensive cultural knowledge becomes a requirement. One must know the respective culture in detail to attack this protected target as I suggest. But any target is vulnerable given that you possess sufficient time and expertise-the word 'sufficient' being the operative term. Also, when affecting cultural laden rules, your usual methods of setting recursive vehicles to influence your opponent's changes. With this tack, you want to possess or develop collection devices to measure more subtle, culturally oriented change or stillness. You remain motionless, watching, as it were, ready to pounce if the target for assessment proves impervious to your entreaties but then shows an unexpected place to apply an appropriate pressure. Gather this data and carefully turn it into useable and valuable knowledge for exploitation.

Other rules prove more susceptible to deception. Accordingly, backward engineer the adversary CAS action models that he believes to be effective and shred the layers and wrappings so as to reach the rules stimulating and guiding the action model. The intent of actions coming thus from certain rules suggests the adversary CAS's aim, goals, objectives, strategies, tactics, and the like. Using this kind of thinking, analyze the adversary's efforts to assess his outcomes via intelligence gathering (recursion). I'm sure you can see that the entwining of rules and action models and the sub-set of action models (assessment and recursion) can lead to a valuable capability-you can know *wills*'s intricacies. They exist and act as they do because of a culture and its influence. Consequently, rules influence outcomes of conflicts as each contestant sees and thinks through the initial contact, resolution, and the aftermath of colliding *wills*. Thus, strategists, planners, and intelligence people must ponder and account for the influence of rules on action models, and in fact outcomes of struggles over competing *wills* and wisely choose the most influential to attack. The admittedly simplistic meme to help us remember this thought process is - seek and find vulnerabilities in the adversary's rules and action models and attack; know he will do the same to you.

Of interest to our inquiry, a person might try to attack a rule that appears the strongest at the start of the struggle, during lulls, and even in a stand-off. Attacking strong rules and then attacking weaker or more nascent rules is a strategy that can work. Let's think on this. First, if important rules come under assault, the foe pays attention to defending the rule with his scarce resources. The resources come from protection capabilities and activities of weaker rules and weaker action models. Second, with repeated assault from a variety of means and directions, you can weaken the old rules and thus cause disturbances in the context. In the meantime, nascent rules become even more susceptible to manipulation because of the ensuing mayhem. Perhaps we can weaken the strongest rules and convince the now vulnerable mind of the adversary that weak rules might be too fragile to protect but regardless, the adversary might accept them and consider the choice to be the lesser of two evils.

Emboldened with such thinking, aim to influence the adversary into changing his choice of rules more to our liking and potential exploitation. Our implored rules could sway the thinking behind CAS action models. The new rule could affect how our adversary selects actions, inures his thinking to imagine our expected outcomes, design assessment observables, choose elements of quality, select collection systems to gather assessment data, and consider assessment

conclusions. Consider how he subsequently shares lessons learned, his presentation of fact and fiction, and how he views truth. This trip into truthfulness or falsity involves how he interprets evidence, how he grasps and clings to truth, and the resultant way he views facts. Again, this strategy affects how your adversary evaluates assessment data. It affects how the adversary CAS learns from its evaluation of assessment data.

Determine the rules that 'massage' your adversary's thoughts about the quality and operational efficacy of his co-evolution efforts as they smolder and rearm following an action. Your goal? Attack them. If you influence this kind of rule, you can influence the thinking behind what the adversary shares by way of conclusions, follow on actions, and lessons learned. Adversary leaders and their supporting people think about assessment data and turn it into information and knowledge via synthesis. Synthesized information transmogrifies into knowledge in the adversary's assessment and adaptation system. We know this elaboration to be biased and subject to logic and bias errors. It is how the adversary thinks and draws his conclusions. And, of further interest in the name of weakness and exploitation, we now know the particulars of his thinking and how his unintended logic and in a way, how his bias errors arouse a variant *sensitive dependence on initial conditions*. This means the enemy becomes increasingly susceptible to affecting how aggregates and aggregations unfold and enfold, build, and lay bare the true phenomenological formation of aggregation theory and the corollary onerous specter involving small inputs potentially leading to large, unexpected outcomes. I want you to watch for the appearance of your foe's penchant to use off-sets in thought and action to account for the potential of such errors coming into being and causing him problems and exploit.

Now for some short admonitions coming from Clausewitzian duality¹⁰

- 1) Influence how your adversary thinks your culture influences your thinking and how you think about the 14 essential elements of *will*, e.g., your errors as you recognize and interpret specific kinds of advantages and disadvantages or degrees of perseverance and determination ... This includes considering how he aims to affect your thinking via cultural inputs to logic and bias errors. This work becomes easier if you suspect that indeed you do err or, on the other hand, if you decry the possibility that you might be erring. This kind of thinking places a requirement directly on you. You must determine how you think via introspection and red team critiques, and how you think that your opponent thinks about the probability of this proclivity being extant in you, his enemy, and if he considers your thinking ripe for exploitation. Be prepared to reinforce this notion to gain an advantage and possess a choice of either preempting or shaping his actions.
- 2) Think about how your opponent thinks about the context and culture's influence on its structure, appearances of data, and the interactions, transactions, actions, and behaviors in links. Also, give serious thought to the appearance and influence of both wanted and unwanted data inputs. Know how your foe assesses outcomes of actions (his and yours) via his intelligence/recursion efforts. Find weak links and prepare to attack or manipulate them to achieve maximum outcomes favorable to your aims, goals, objectives, strategies and so on.

¹⁰ Clausewitz, 77.

- 3) Think about the vastness of the macro-context encompassing your world. While your particular conflict seems small, it nonetheless congeals and connects to larger and larger contexts, which enfold smaller wholes and unfold into even larger, aggregated contexts. Contemplate the whole of the macro-large context, macro-small context, micro-context, and the individual context.¹¹
- 4) Anticipate and affect how the adversary's culture controls the rules that guide and control CAS action models.
- 5) Attack and disperse congealing aggregations inherent to chaos in the context that might provide your adversary with a positional advantage. Enable him to grasp the access to your actions, assessment, and adaptation and transform this active thought to seize one or more advantages, e.g., initiative, tempo, momentum. It is a good place to attack or manipulate the adversary's intelligence system and thus gain knowledge and decision advantages.

Seizing advantages from the context and denying the adversary similar capabilities leads to a state of superiority, specifically in knowledge and decisions in bouts of *will*. To win, attack your adversary's co-evolution system. Do not ignore this aspect of struggle, as attention to detail in this kind of mental combat provides a decided advantage in battles of *will*. Within the operational context, the aggressive, anticipatory seeker looks for advantages and disadvantages in how the adversary perceives, thinks, plans, act, assesses, and adapts. Attack or manipulate your adversary's advantages but always remember to extend secretly the life of his disadvantages. Anticipate his attacks on your advantages and protect yourself. How the foe tries to grasp certain elements of the seven kinds of advantage signals and hints as to the nature of his future plans to attack, exploit, and win.

The culture influences everything that happens in the context. It permeates (or should permeate) all thinking, plans, actions, assessments, and adaptations for yourself and your adversary. Yes, our best and brightest have to think about this process from two perspectives: their perspectives and their opponents.' My approach to winning contests of *wills* requires you to think about how the adversary thinks about your thinking, how you act, and eventually, how you adapt. My approach suggests that you relate to the cultures involved and aggressively influence entities in the fray, such as individual and collective weaknesses, national and international rules of engagement, his resources, and constraints.

I ask that you study *will*'s definition, as such knowledge will help you win fights for your *will* dominate your foe's. Along with knowing *will*'s definition, you must comprehend the presence and influence of turbulence and change in all contexts housing conflicts. Remember, turbulence and change originate with chaos. Chaos comes with natural weather events and the energy coming from act, counteract, and reach activities between unpredictable foes in struggles of *will*. Other contributors live in the culture where the fight is occurring. Also, people in a culture contribute to turbulence and change via their acts, transactions, interactions, and associated behaviors. Additionally, consider unexpected chance events (friction) and

¹¹Wayne Michael Hall, *The Power of Will in International Conflict* (Santa Monica: Praeger Security International, 2018), 45-46, 50.

randomness. As another contributor to contextual turbulence and change, the thought warrior anticipates unexpected appearances of nonlinearity systems and various characteristics. This warrior worries and rightly so, how nonlinear phenomena appearance contribute to the turbulence. As a last contributor to change and turbulence, the culprit is data. Some data you want and seek; you need it for making decisions, acting, assessing, and adapting. The context provides other kinds of data-some expected and wanted and data appearing with suddenness and influence that isn't wanted. Further, other appearances of data concern us. That includes false data in the form of misinformation, disinformation, or downright deception can appear and influence one's plans and actions. I ask that you to remember to recognize the power of culture in all that happens particularly of your thoughts and the thoughts and actions of your opponent. All the pieces of culture matter and connect. Recognize and work with the cultural rules that guide thinking, action, assessment, evaluation, and adaptation. Always identify and leverage the advantages and disadvantages existing in the context and acknowledge your susceptibility to vagaries of the context.

Learn to wargame the adversary's wargaming. Immerse your mind in your adversary's highly influential culture. As you wargame your adversary's wargaming, employ people of your adversary's cultural background to act as this adversary. Require the opposing actor to develop a complete plan and explain how he plans to defeat you, the most important impediment to his impositions of action to win in battles of *will*. Contemplate how he intends to defeat your plan and how you would defeat your own plan. Do the same for him, from his perspective. Contemplate his planning at its inception with his intent to destroy you by attacking your plans, attacking or manipulating your 14 critical elements of *will*, and attacking or manipulating your thinking.

Your goal? Enter his mind, understand the importance of his culture, and recognize the power of his cultural rules as they select, shape via constraints or values and drive his CAS action models. Learn his thinking as he attempts to use context to gain and hold one, two, or all seven advantages. Work with the 14 element thought model of *will* relative to the adversary and to the context at hand. Always consider how the adversary CAS's culture influences him, as he works with his and your *wills* as the 14 element thought model represents. The arrow of time and these 14 elements prove culturally laden; it always engulfs all that happens or doesn't happen in operational contexts.

Life Force	Purpose	Capabilities	Strength of Motive	Passion	Perseverance
Determination	Advantage and Disadvantage	Sacrifice	CAS Adaptation	That Which Truly Matters	Trinity, Incentives, Inducements
Value of Objectives	Constraints	Pressure Points, Decisive Points, Centers of Gravity	Kinds of Will	Fear of Alternatives	Pressures

Table 3. Considerations of *Will*

I decided to strengthen my thought models. To this end, I added intellectual heft with a table; it has 18 considerations that a strategist, planner, or intelligence person needs to learn to successfully think about and use *will* in conflicts. Naturally, you will find some overlap between this figure and Table 1, which lays out the elements of strategic thought. Thinking about this table occurs from two perspectives-yours and your adversary's. Our focus here is on the subject of *will* and how to think about it to optimize its usage in conflict. To successfully impose one's *will* on another party or parrying the recipient's attempt to counter and impose his *will*, you must understand these considerations. Such comprehension allows you to recognize the extent, depth, and quality of the deliberations you must make before optimizing this great phenomenon, *will*. Accordingly, I'll briefly discuss these considerations but know this well-they all come forth in greater depth in my book of *will*.

The people most able to use these considerations involve decision-makers, strategists, planners, and intelligence analysts. I started working on this list of considerations quite some time ago in my many years in US Army infantry divisions. But I focused on the term the most as the J2, also known as intelligence officer, for the US Forces in Korea. Unable to totally crack the coat of protection and secrecy surrounding my adversary's *will* in that crucible, I thought about *will* every day. I attempted to anticipate what would happen if the North Koreans attacked the south like they did in June 1950. I wanted to anticipate why they would risk regime change in a war. What would they desire? Said another way would their strategic aim, goals, and objectives be limited or unlimited? I attempted to think like they think and discern their aim, goals, objectives, resources, constraints, strategies, tactics, *will*, pressure points, decisive points, centers of gravity, and so forth. I wanted to know what their *will* would be relative to a limited attack or a total attack to conquer the entirety of the Republic of Korea.

Then, in about 2005 I started to tinker more with this difficult, seemingly impenetrable concept of *will*. It was then that I developed for the first time a list of considerations one should make in order to impose or deny *will* successfully. I became more motivated to explain *will* to my seminar students in 2008-2014, but unfortunately, I only briefly discussed it in my book about advanced intelligence analysis and thus didn't have more than a shallow level of thought about the subject. But I did continue to come up with a few more considerations of *will* that seemed appropriate and usable. Since then, I have been adding, subtracting, and combining considerations of *will*. In retrospect, before 2014, I barely scratched and just skimmed along the edges of the notion of *will*. But I didn't stop, think, and go into this concept in detail. I have now done so. Now I have picked and shoveled my way into the heart and substance of *will* via my book, *The Power of Will in International Conflict*.

This journey beckoned me to go into deep think excursions and to add and subtract considerations for using and optimizing my knowledge and understanding of phenomenon. I determined that one has to think deeply and for a long time to sufficiently plumb the depths of this phenomenon. Indeed, it takes a deep dive to know and employ the intricacies of *will*. Such familiarity is essential in creating superior ways to use data, information, and knowledge.

It helps our minds to know that information superiority connects with *will*. With a condition of information superiority in hand, a fighter gains an edge in the fight for decision superiority. By acknowledging the presence of a condition of superiority and the advantages it brings, we can control the flow of data, information, and knowledge, which provides the capability to attack our adversary's co-evolution processes. Success at this decisive point helps us successfully to impose our *will* on our adversary.

As you read and study the book and this compendium of thoughts, you realize that comprehending *will* requires hard mental work. Accordingly, our minds frequently travel to our high country¹² of thought and into the depths of our inner sanctum to contemplate what each consideration means. *Will* proves so difficult to understand that as one examines its parts, such as considerations and learning its intricacies, they feel the pressing requirement to dive deeper into the ocean of *will* and learn from its depths how to employ the considerations and intricacies under study relative to mental and physical combat. This kind of conflict occurs in particular contexts, working against specific adversaries, and we have to know they want to do to us or what we want to do to them. I'm sure you agree this is an interesting dynamic and the notion of duality and riding the wild pendulum help you to ensure the dynamic settles on your side. With improved understanding of these considerations, we come to realize how meanings and truths prove to be chameleon-like. I need to explain what I'm describing. Changing truths come forth and hit our consciousness via unpredictable adversaries in constant states of flux, chaos in operational contexts, nonlinear incidents, and episodic randomness and friction. With duality we know our foe will try to outthink us in contests of *will*.

- He engages in mental combat and proves capable of fighting for ascendancy of his *will*.
- He views the information age as being a perfect setting to attain information superiority.
- He desires dominance in all aspects of the information domain. As such, he believes that this dominance will spread into control of the moral and physical domains.

¹²Robert Pirsig, *Zen and the Art of Motorcycle Maintenance* (New York: Bantam Books, 1974), 113.

- Ultimately, our adversary always wants to outthink his opponent in the imposition and denial of actions involved with clashes of *will*.

These considerations of *will* involve the thinking that people must perform to optimize use of their knowledge as a weapon system in its own right. Such intellectual competence can come from study and contemplation of these considerations of *will*. Our goal is, of course, to triumph in contests of *will* and soundly and quickly thrash the adversary's *will* in any contests or conflicts involving *will*.

I originally designed 42 considerations of *will*. But the list was unwieldy. So, I shortened it to what I construed to be the most important considerations. Even with this paring, however, you must know that typically people won't have time to consider all 18. Instead, you need to select the right considerations appropriate to the mission, situation, context, and adversary. Gaining comprehension in our thinking to be competent in each consideration is challenging. Then, gaining sufficient knowledge about each of these considerations to turn them into action is even more difficult. I explain each of these considerations in the book. They serve as separate and conjoined bridges between theory and practice. And it is moving from theory to practice that I want the reader to pursue. It can be done. Our goal is to leverage each consideration to design actions and to co-evolve faster and more effectively than the adversary. Our intent is to use our emboldened minds to win in contests of *will*. More or fewer considerations could be appropriate depending on the adversary, context, your aim, goals, objectives, and so forth.

As a logical next step, the purveyor of conflict readily admits that people who know 'how to think' about conflict accept the appearance of a certain kind of flexibility of mind to work with a changing selection of considerations as you think about *will*. To develop flexibility, consider possibility. And, you need a recipe for turning thought into action. One finds as they think to enhance flexibility of mind, they simultaneously broaden their range of comprehension to include a wide range of possibilities for winning bouts of *will*.

This list of possible considerations provides you with a mental pegboard for picking those you want to work with, given the amount of time in play and the required mental posture meeting the demands each consideration requires. Unfortunately, you find limitations. That is, even with challenges to good thinking, e.g., context, adversary, nonlinear activities, flexibility and agility of mind proves indispensable. Know too, these 18 considerations serve as a framework, and they guide our thinking. They are not dogma; accordingly, add or subtract as makes sense in your particular situation.

In my experience people rarely perform the mental work to contemplate these considerations. It is quite the challenge to think about them from all the perspectives relative to the culture. Nonetheless, decision-makers, strategists, planners, and intelligence analysts must learn to recognize exactly whose perspectives prove most important. These perspectives provide the 'wallpaper' of the context in which our contest of *will* occurs. Reasons for careful and limited selection of considerations could include the confluence of available time and the intellectual capacities of the people who need to understand thoroughly the consideration. Also, one can find it difficult to employ acquired knowledge when coping with an inherently dynamic nature coming with a co-evolving adversary and the influence of turbulence in a nonlinear context. Or perhaps the context might not provide sufficient conditions for some considerations to be relevant. But rest assured, the potential for change and movement toward goals and objectives lurks and lives in the heart and mind of your opponent waiting for the right moment to strike to

impose his *will*. Thus, the considerations you select must relate to a dynamic adversary and fluid context. And perhaps the adversary doesn't match with any, let alone all of the list of considerations. It follows that your mind must move from 'what is' to 'what could be' coming from your wargaming for co-evolution and adaptation and wargaming the adversary's wargaming so as to comprehend what his considerations of *will* could be at the present or as they come into being, during action, and in the aftermath of the engagement.

So, my advice is, use care in choosing the consideration that you want to work with and draw a cut line separating those you choose to work with and those you put aside, or 'below the cut line.' For those considerations below the cut line, the ancient bogeyman lurks-risk. Thus, ensure people with whom you work know how you delineated risks. They also need to know how you intend to mitigate negative outcomes of each consideration if your choices don't do well in bouts of conflict.

In conflicts of *will*, 'truth' changes. If people acknowledge that truth can change, then they anticipate, prepare, and strive for the nimbleness of mind I discussed in some detail earlier. I raise this subject again because it requires a sentinel of sorts to remind us of a specific need to periodically revisit how to you are thinking (that means revisiting and refreshing your thinking processes and conclusions) about the considerations of *will*. Simultaneously, you and your Red Teamers evaluate the efficacy of your assumptions, influence of logic errors, and influence of biases. You aim to make optimal use of incoming data, information, and knowledge. Armed with the certain knowledge that truth changes implies a distinct need for anticipation, flexibility, and understanding the contextual variables at play. Our newly gained knowledge guides our thinking to where it recognizes the connections between our accepted rationale supporting the veracity of original truth and its cascading evidence and fact believability. Our strategists, planners, and intelligence analysts sense and possibly even see multiple strands of gossamer connecting the current truth with the form, shape, or object, of a new truth coming into being. Such thinking is vital for noticing and addressing changes in existing considerations and, of course, recognizing the obvious or subtle appearance of new and suddenly demanding considerations.

Now, let's talk about these 18 considerations. All appear in the book in a table, Table 2.1, page 25. And, the book explains each. In fact, I devote entire chapters to most of these considerations. In my view, this thought cabal (strategist, planner, intelligence analyst) must consider these elements (or some of them) of the table to succeed in planning for and executing impositions of *will*. Here are brief definitions of each of the 18 considerations:

- 1) Life force is an originating and impetus force within a human that ignites and motivates purpose, strength of motive, capabilities, passion, sacrifice, and so on. Life force is a fundamental dynamism within one's being that compels a person to take what another person possesses.
- 2) Pw:pose is the reason, grounds for, cause for which something is done or created, or why something exists.
- 3) Capability is the means, ability, and potential to perform or achieve designed actions or outcomes through a set of observed and measured acts, activities, and influences.
- 4) Strength of motive needs to be divided: A strength is a status of being strong, such as in equipment, technology, endurance, etc., or taking a stance against unfavorable odds or potential cost or loss. A motive is force or energy or other provocative phenomena that

cause people to act in a certain way, do a certain thing, endure deprivations, or operate, act and behave, or perform. It involves not only its content or resolve, but also the action and outcomes I intend to cause. Motive is sublimated to life force, and purpose, but it infuses energy to all other elements in my model of *will*.

- 5) Passion is a strong craving whose presence and influence interferes with rational thought. It often appears as emotion, which can imprison rational thought. With passion, one's rational and deep thinking capabilities decay. This means that the adversary, context, and derivative considerations can become victims of the highly influential emotion of passion. Naturally, one has to take into account the presence of passion not only with respect to the adversary, but with respect to one's own forces. As another perspective, know that the process of wargaming passion always proves difficult. For one thing, you must wargame how the adversary thinks about your passion. For another, you must consider how the adversary thinks you think about his passion and how he thinks about your passion. To understand passion, we have to think and feel the emotion our adversary experiences, whether strong, weak, or dormant. Passion does matter, and you must take it seriously or pay the consequences.
- 6) Perseverance is the indomitable continuation, lasting power, resolute finishing of an action, or dogged, continued defense against another person's imposition of their *will*.
- 7) Determination involves a firmness of one's fixation on resolve, purpose, resistance, and imposition actions. People can comprehend the difference between determination and its twin, perseverance. Determination is a fuel that activates and propels perseverance. This fuel flows throughout the 14-step *will* model to empower decision-makers' *will*.
- 8) Advantage and Disadvantage.
 - Advantage-a situation of being in a preferable position over another competitor.
 - Disadvantage-a state or an instance of being in an unfavorable circumstance or condition.
- 9) Sacrifice means a readiness to endure loss even with physical and emotional pain for the sake of accomplishing an aim, goal, objective, successfully executing a strategy.

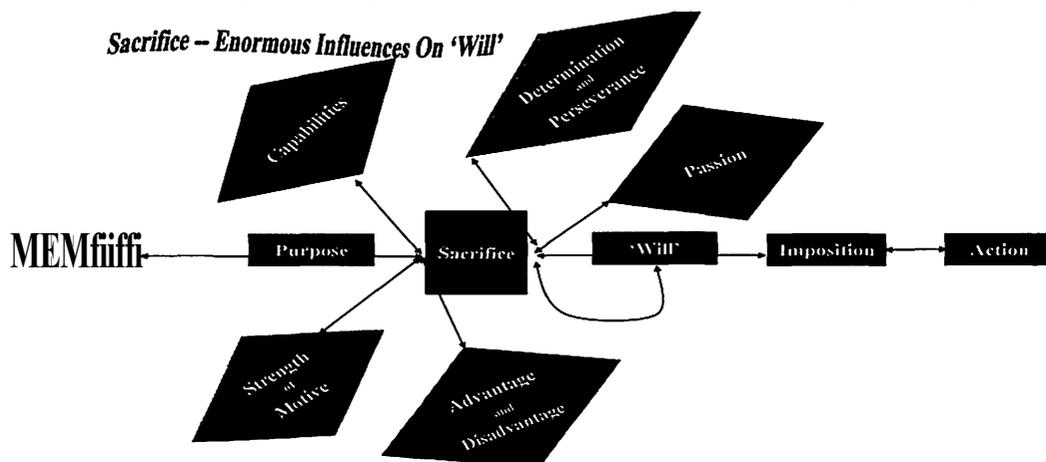


Figure 17. The Importance of Sacrifice

vulnerable to exploitation. I advise you to seek, find, attack, neutralize, kill, or deceive the decision-making their assessment process feeds.

- 11) That which truly matters involves using our higher level thinking skills such as analysis, synthesis, and holism. People use these thinking methods to discern the nub or central idea of value over which people struggle. Also, we have to think about capability and strength of motive. With deep thinking, knowledge blooms from the manipulation of data into information and the transformation of information into knowledge. Winners in contests of *wills* always seek ways to twist this knowledge sufficiently to transform and use it to gain power.

Knowing that which truly matters is a powerful capability because it also gives us a peek behind the curtain masking the inner thoughts of our competitors. The notion of that which truly matters is influential because it connects with other parts of the book, such as 'value of the objective.' Recognizing that which truly matters must appear in how we think about moral and physical domain weapons to win in contests of *wills*. However, I ask you to remember the word 'duality.' Here it means that the adversary will be trying to think as you think and protect his 'that which truly matters' from your efforts to exploit. Thus, know your adversary will consider and then attack what he thinks you think 'that which truly matters' to be to you.

- 12) Marvelous trinity, incentive, and inducement. Trinity as I paraphrased from Clausewitz's tome, *On War*, is composed of primordial violence, hatred, and enmity. It has a blind natural force; it involves the play of chance and probability where the creative spirit is free to roam; the trinity and its elements are instruments of policy, which makes it subject to reason. The first of three elements concerns the people; the second the commander and his army the third the government.¹⁴ I advise you to know with certainty that your opponent intends to protect his trinity and attack yours.

Incentives prove important in any considerations of *will*. An incentive incites or tends to incite to action, as a reward offered for increased productivity. It also means an action, reward, or promise that could motivate or encourage desired action in an opponent. Know that an incentive is benign because there is no punishment intimated if the incentive is rejected or if it fails to alter behavior.

Inducements attest to being similar to incentive. But an important difference exists. Yes, an inducement is an offer that promises or encourages one side to accept the terms of the other side's desired outcome. But an inducement is more threatening than incentive. It implies punishment if the receiving side tries to manipulate conditions of the agreement for their self-interest. An inducement is not benign and is actively dangerous because there is punishment implied for rejection and for failure to change behavior.

- 13) Value of objectives. Value means a moral principle and belief. One or more values means the acceptance and standardizing behavior of a person or a social group to cultural norms. Values involve principles that shape goals to accomplish, or power that people seek to use to control. A value derives from the culture and individual perspective. Know that people, organizations, and countries have values. The culture

¹⁴ Clausewitz, 89.

houses, explains, and enforces rules relative to values. Thus, it is self-evident that values live in cultures, in which operational contexts and battles of *will* exist.

Values prove significant and useful, sometimes prized, in a variety of ways by all sides in a competitive situation. An objective involves a desire aiming at accomplishing a goal or outcome via action. It is deliberate and consumes mental and physical energy. This energy feeds the appetite of the elements comprising *will*. The book discusses the value of objectives in depth. Suffice it to say, there is a value to objective ratio one can use to help them think. As one example, the book shows you how to divide the value to objective ratio into quarters.

The first 25% involves the quality of this sequence-vision, desire, resolve, *will*, purpose, capabilities, strength of motive, advantage, disadvantage, perseverance, determination, passion, sacrifice, action, assess, collect assessment data, evaluate, learn, and adapt. This is the sequence of one's imposition of his *will* on other people, organizations, nations, and the like. It has to be effective to enable imposing one's *will* to be successful.

The second 25% involves a must consideration of duality. This judgment leads to the back and forth of wargaming, wargaming the adversary's wargaming, identifying how he thinks, and how he thinks you think and so on.

The third 25% involves identifying your adversary's highly considered objectives. My counsel is to identify and take these prized objectives away or alter their state of appearance and capability. Such focused strokes at the heart of his many objectives thus causes angst and deviation. Such well-aimed stroke affects the physical well-being of the recipients of your imposition and it creates cognitive dissonance causing divergence in their thinking, acting, assessing, and adapting.

The fourth 25% involves protecting your objectives and their value by anticipating, wargaming our adversary's wargaming, and influencing his intelligence system. This tack attacks or manipulates his intelligence feeds supporting his co-evolutionary needs. Out of necessity, he must continuously gather data to feed his decide, act, assess, evaluate, learn, and adapt faster and better than his adversary. It is vulnerable to manipulation and neutralization.

- 14) Constraint is a restraint or limitation on action or behavior. The constraint can appear due to morals, values, lack of resources, limited capabilities, limited time, contextual turbulence, legal restraints, or cultural inhibitions. A constraint can impede the efforts or desires of people attempting to impose their *will* on another person or to parry an effort of an adversary as he attempts to impose his *will* on you.
- 15) Pressure points, decisive points, and centers of gravity. A pressure point is a sensitive, critical point, weakness, or dispute against which pressure of many persuasions is directed. One finds many pressure points in bouts of mental combat. A decisive point is a point so important that it allows you to gain a marked advantage over an adversary or significantly contribute to achieving success. Centers of gravity-the hub of all power and movement on which everything depends. That is the point all our energies should be directed.¹⁵ Please note, as you think deeply, you see these three notions, sometimes

¹⁵ Clausewitz, 595-596.

realities, as they entangle. The entangling amalgamation of these three concepts can become a whole comprised of aggregates and aggregations which contribute mightily to discerning that which truly matters and the values of objectives.

- 16) Plethora of wills. As we think about kinds of *will*, variety appears and influences the quality of actions to impose your *will*. The variety includes a variety of *will* that you must consider such as-adversary, friendly, populace, willpower (not our focus in this book), governed people, individual, groups of people, combined, leaders', governing people, organizational, religious, and so on. Keeping this extensive variety of *wills* in mind, the important things to remember involves several ideas. Settle on the right *will* or *wills* that you must affect to win. Divine the target that you intend to impose your *will* upon and the goals and objectives you seek. Know how your goals and objectives link with the *wills* you target for action. Consider this struggle of *will* from your adversary's perspective. Anticipate your target's strength of motive, capabilities, and other pertinent elements of the 14 element thought model the book presents.

Along with imposition comes its antipode. That is, one always has to anticipate how your adversary sets to resist or capitulate. If he resists, know how he thinks about imposing his *will* on you. Always consider his self-interest, true purpose, strength of motive, capabilities, perseverance, determination, sacrifice, passion, advantages, disadvantages, and so on.

As a last aspect of this consideration, I want you to think about the astonishing phenomenon of unintended consequences and the birth of new kinds of *will*. Think about the appearance of congealing combinations when they bond first appear as a single aggregate. But soon it transforms into an aggregation with velocity. It then transmutes and becomes much stronger and much more likely to have the capabilities to successfully impose its (the aggregation of aggregates) *will* on others. Or, naturally, this aggregation becomes dangerous and a constraint to your efforts. In fact, it becomes a huge aggregation (whole) whereby the whole is greater than the sum of its parts.

- 17) Fear of alternatives-Let's break this phrase apart. Fear means a disturbing or threatening emotion arising as a premonition of lurking danger, trepidation of an impending experience, or a foreboding state of mind coming from one's mental and emotional status. Alternative means the presence of a certain flexibility, the appearance of varied options, a vision of a different method or path, or the availability of a selection from which to choose. Alternative proves to be a close relative to potentiality, which I define as "possibilities unbound by constraints." A fear of alternatives is when one or more people fear the alternatives, they think to be available. At times, people decide the alternatives are unsatisfactory and choose an alternative to end their lives. The Japanese civilians on Okinawa come to mind, as thousands chose to commit suicide instead of surrendering to the advancing of American military forces in the summer of 1945.
- 18) A pressure is the continuous physical or emotional "weight" a decision maker, or anyone for that matter, feels, intuit, senses, or thinks about as they make decisions. Pressure comes with dealing with turbulence, nonlinearity, fear of failure, risk, ego, self-interest, adverse outcomes of battles of *wills*, and the unknown coming from not knowing the adversary's heart and mind and the changes that come once the contextual

pool of quiet water becomes agitated with stimulation and intrusion. Examples of pressures of interest to us could include self-pressure; ego; and self-esteem; physical; adversarial; organizational; political; historical; cultural; familial; hatred; revenge and so on. We have to know our own potential pressures in which the adversary could purposefully attack thus creating pressure on the friendly leadership hierarchy with the goal of seeking advantages or attacking valuable objectives or causing perturbation in that which truly matters to us. And, the antipode once again. That is, know the adversary's vulnerability to pressure and vigorously attack it.

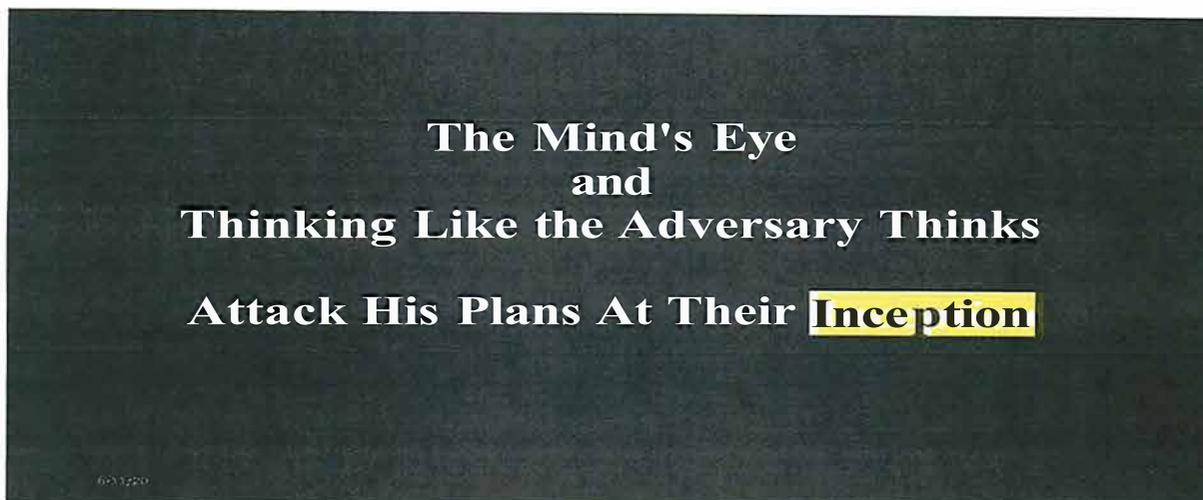


Figure 19. Thinking About the Adversary's Mind's Eye

Imagination-the most important aspect of thinking. It was Albert Einstein who said, "Imagination is more important than knowledge." With this in mind, I ask, What is an adversary's mind's eye? Why inquire, I hear my readers ask? It is a foregone conclusion that I must imagine my adversary's mind's eye so as to influence it. A human being's inner sanctum of thought is his mind's eye. It is where one imagines, visualizes, makes connections, synthesizes bits and bytes into wholes and where thoughts form. The incoming data, false and true, valuable and rubbish, comes via fragments and shards into this sanctum via one's senses-through bodily portals into the quiet, inner refuge of one's thoughts.

The mind's eye functions as a gatekeeper or entrance point for a person's undermind. It is in the undermind where the fragments, shards, and shreds of data swirl, come forth and sometimes collide, sometimes accepted into rational thought and imagination whose home is the upper mind. Sometimes these seemingly meaningless shreds of data make it into the upper mind and become meaning because the upper mind and the mind's eye seek this data. It is this need that serves as the cause for the selection and retention and use of certain, meaningful, thus perhaps valuable data. Thus, shards, bits, and bytes can pass from the undermind into the mind's eye and on into the upper mind.¹⁶

Let us venture forth and think about the duties of the mind's eye's. One's mind's eye serves a particular duty-it is a gatekeeper, a guardian, as it were. It prevents the upper mind from being overwhelmed by massive amounts of data coming into the undermind every second and minute. This role presents opportunities for entering, striking, or influencing the adversary's mind's eye while being wary of similar enemy actions attempting to probe your mind's eye. It is via the adversary's mind's eye you can attack adversary plans at their inception.

Please allow me a moment or two to add a few more thoughts for your understanding. It is through the mind's eye that one can see the world as the adversary sees it and thus grasp his/her perspectives and perceptions. It is where the life-force lives and where dreams of passion, desires, retribution, hatred, love, fears, live and blow about in the vastness of the mountains, plains, and swamps that form the human mind, the wonderful human mind. It is via the mind's eye one finds the adversary's inner sanctum and high country.

¹⁶ Guy Claxton, *Hare Brain, Tortoise Mind* (New York: The Ecco Press, 1997), 72.

With this discovery, you now discover how to approach several onerous tasks. Some of these tasks include understanding-how he thinks, what he thinks, why he thinks. Another task requires that you consider how his logic and bias errors, culture, education, perspectives of technology, and world-view affect his mind. As you ponder your adversary's mind's eye you realize that several elements, activities, influences, and predilections condition your adversary's mind's eye and how it functions. As a few, consider the influence of *will*, culture, education, world view, experience, intellect, view of you, view of technology, view of the operating context, mythes, values, social mores, rules, emotions, and so on. It is here, in one's mind's eye, where the seeker of truth can carve pertinent facts and evidence leading to a firmer grip on truth than ever before. It is in the inner sanctum, inside the mind's eye, that you unearth the inception of thought. It is the starting point in which opponents choose to capitulate or to do battle to win wars of wits and bouts of mental combat for triumph of one's *will*.

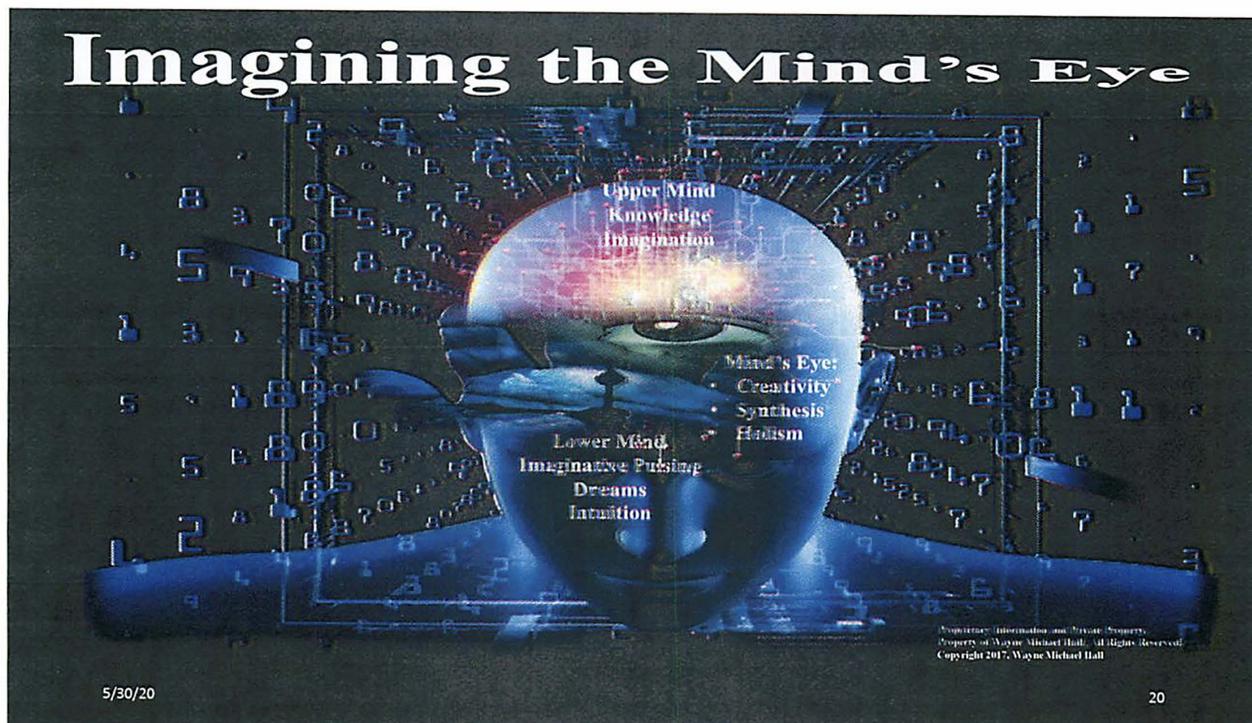


Figure 20. Imagining the Mind's Eye

A mind's eye is, of course, to be found in a human mind. I speak of a mind that is thinking about imposing his *will* on an opponent who possesses something he wants. Or I could be thinking about a mind, deep in thought, discerning whether to parry or capitulate to an imposition. The Merriam-Webster dictionary defines mind's eye as *the mental faculty of conceiving imaginary or recollected scenes*. My definition of mind's eye is a place where functions relative to the dictionary definition occur. Here is the definition that I developed for my book of *will*. A mind's eye is an

... inner sanctum of thought where one imagines and visualizes a comingling of data fragments and shards streaming into this sanctum via the body's portals into the quiet, inner refuge of one's private thoughts.

Psychiatrist Carl Jung has another label for what I identify as the phenomenon of mind's eye. That is, in my view, he uses the word *psyche* to describe the mind's eye I use in my book. All thinking people recognize that they have a *psyche* and other people have *psyches*. I dare say, that they recognize we live with consciousness, where we think, plan, decide and unconsciousness, that is unknowable. We go into the well of the unconscious only in our dreams and during the strange instances all of us have experienced in being alive in other times, *deja vu*, flashbacks, and visions of what could be in the future. We walk on solid ground when we realize and admit out loud that neither the conscious nor unconscious parts of our minds can ever be completely understood. Dr. Jung's thoughts add brightness to our mind's eye as he tells us,

But the psyche creates our world, our understanding, which allows us to make only indirect and hypothetical inferences about the real nature of matter. A struggle occurs in one's psyche between real and unreal ideas and thoughts ... Hence if we speak of the totality of an experience, the word 'totality' can refer only to the conscious part of it... the psyche is no exception to the general rule that the universe can be established only so far as our psychic organism permits.¹⁷

This means to me that if we expand our intellectual horizons, we will be able to extend our view of what is possible. Jung goes on to posit,

Anything psychic is Janus-faced: it looks both backwards and forwards. Because it is evolving, it is also preparing the future. Were this not so, intentions, aims, plans, calculations, predictions, and premonitions would be psychological impossibilities.¹⁸

The mind's eye is indeed difficult to describe as it is a human being's inner sanctum, deep within a mind, where a host of intellectual functions occur. Carl Jung helps us a little with this thought,

I know, however, from hundredfold experience that it ... contains the equivalents of everything that has been formulated in dogma and a good deal more, which is just what enables it to be an eye destined to behold the light. This requires limitless range and unfathomable depth of vision.¹⁹

I believe, broadly speaking, that the mind's eye is where, at a minimum, some intellectual functions occur such as, 1) analysis, 2) synthesis, 3) combination, 4) fragmentation, 5) coalescence, 6) relationships, 7) combinations, 8) integration, 9) synchronization, and 10) the place where an apparition that is holism first casts its welcome shadow. To reach this higher level of thinking, one can pay a price, so Carl Jung tells us about the light of knowledge and its enabling function for broadening and deepening one's mind,

The brighter it becomes via deep thinking and knowledge, the more agitated the unconscious becomes and the wilder the dreams that come forth therein.²⁰

One's mind's eye, or as Jung calls our psyche, is a place where the thinker works with aggregation and wholes. Thus, our person becomes aware of a propensity at play, requiring a watchful eye for the appearance of conditions in which variables become not only sensitive but highly influential. They watch for and recognize when sensitive dependence on initial conditions becomes prevalent. They watch for and shape the conditions when small inputs start causing the

¹⁷ Carl Jung, *Psychological Reflections: A New Anthology of His Writings 1905-19617*, vol. 11, ed. Jolande Jacobi and R.F.C. Hull (Princeton NJ: Princeton University Press, 1970), 7.

¹⁸ Ibid, 15.

¹⁹ Ibid, 20.

²⁰ Ibid, 25.

formation of large, unexpected outputs such as in aggregates becoming large aggregations. It is where the birth of causality occurs as causes to links to effects appear first as a vision, then as real action. It is there, in the mind's eye, where this sought after presence of holism first lights up the probabilities for achieving synergy. These prospects lurk in the operational context and often take only the embracing of a sensitive variable to come forth into actuality and influence in contests of *wills*. With synergy, one finds a variant of holism and in so doing discover the phenomenon of wholes being greater than the simple sum of their parts. One of the implications that come to mind is that leaders and decision-makers should recognize and employ the mental power of their best thinkers' minds' eyes to perform this deep and arduous thinking. Also, this implication suggests that mental combat involves a battle between contestant's mind's eyes.

As I consider the mind's eye, I notice its brightness and its functioning. The brightness ebbs and flows but continually becomes brighter and brighter with study, deep thought, expression, and understanding of reflection. Interestingly, Jung tells us that as an event occurs in what I call an operational context, it occurs again in our minds if we are conscious of the event.²¹ Along the line of thought about the reality of a human being's mind's eye, Clausewitz tells us of what he calls the *inward eye*. He says the inward eye,

Stripped of metaphor and of the restrictions imposed on it ... merely refers to the quick recognition of a truth that the mind would ordinarily miss or would perceive only after long study and reflection.²²

Clausewitz also tells us of the inward eye of a relationship relative to my book's discussion of determination and perseverance as essential elements of the 14 element thought model I present in *The Power of Will*. As such, Clausewitz tells us,

Their courage and their intellect work are separate, not together; determination, therefore, does not result. It is engendered only by a mental act; the mind tells man that boldness is required, and thus gives direction to his *will*.²³

His thoughts help to reinforce a connectedness between *On War* and *The Power of Will* with this thought that men

... cannot possess determination in the sense in which we use the word. They may act without hesitation in a crisis, but if they do, they act without reflection; and a man who acts without reflection cannot, of course, be tom by doubt.²⁴

Clausewitz's inward eye deals with presence and means to reason and always seeks a balance of mind. Under even the most difficult situations, the mind can't succumb to fear of failing or the emotion of physical fear. Instead, he tells us the intellect (my version of the mind's eye)

²¹ Jung, 22.

²² Clausewitz, 102.

²³ Ibid, 103.

²⁴ Ibid, 103.

... must play a great role in war, the domain of the unexpected, since it is nothing but an increased capacity of dealing with the unexpected.²⁵

Something else occurs in the mind's eye. It is perception, which is, of course, a derivative of perceive. To perceive means 'with heightened awareness, to know, or identify by one's *nous*.' It is perception that directly affects how people think, plan, and interpret. 'To perceive' is the start of a thought process that my book, *The Power of Will in International Conflict*, presents and uses in hypothetical planning, wargaming, and advanced analysis sessions. Perception is how one's life force first alerts to the desire (the starting point of *will*) arising within one's mind. Perception is how a person first becomes aware of the potential of resistance to his desire and what outcomes could come forth from a clash of *wills*. As a perception departs, traces remain; they prove to be vestiges. The deep thinker scrapes these traces and synthesizes them back into wholes. With the wholes, the mind's eye turns what one first has an inkling, a perception, then it proceeds into concepts, ideas, cost/benefit analyses, thinking, and so forth, as I listed earlier. Just keep in mind, perception isn't thinking but the start of thinking process. It's where one's imagination comes forth to influence the IO thought functions I listed before, e.g., synthesis, holism, integration, fragmentation, coalescence, and so on. Remember, your adversary is probably going through the same intellectual drill.

Borrowing from Sun Tzu who tells us to "attack the enemy's plan at their inception,"²⁶ interpolation tells me the best time to start attacking or at least influencing my adversary. My thinking tells me that any action must be very subtle at first. Then, I hear my readers and listeners ask a good question-They ask why? I have an answer. That is, an appearance appears in my mind's eye - it is a perception. Such appearances suggest the presence of one or more causes to link to effect relationship. Change it is, that actuates my sensory apparatuses. I notice signs of change through slight movements, subtle actions, nuanced shifts in verbiage, variations in what are repetitive or normal patterns, or better yet, the slowing or speeding up of the activity involved with standing patterns. The thought here is to imagine what my adversaries could be. I also capture in my mind's eye a visual that shows a nexus connecting perception, desire, life force, and resolve. I then set my co-evolution system to work against my opponent. This heightened watchfulness disturbs the universe. I attempt to hide the cause of the disturbance via social media, exercises, or training. I employ advanced analysis observables to focus my intelligence collections tasking. I'm specifically looking for data showing a blip indicating shifts or disturbances in normalcy and indicating unexplained changes in my adversary's activities, perceptions, desires, life force, and resolve. Can this be done? The answer is yes, by all means. We have to pursue such thought to control the initiative and the other six advantages.

Another master of conflict helps us understand the mind's eye. I speak of and quote from Sun Tzu's famous aphorisms. As one relative to our effort, Sun Tzu tells us

²⁵ Clausewitz, 102-103.

²⁶ Sun Tzu, 77.

To subdue the enemy without fighting is the acme of skill. Thus, what is of supreme importance in war is to attack the enemy's strategy... Attack plans at their inception.²⁷

With such adjurations rampaging through our thoughts, one finds, with deep thinking, some of what could happen or has happened in one's mind's eye. That is, if we listen to Sun Tzu, our desire becomes to attack the adversary's plans at inception. To do so, we plot his defeat before he commences actions to impose his *will*. To attack an enemy's plans and his strategy at their inception takes a connected presence and guidance of aggressive intellects from a number of people.

One aspect of this work is to find the clues. I talking about the beginning of effects, links, and causes. Such clues could lead our minds to alert on changes in energy levels causing subtle alterations in the operational context. Finding changes at inception suggests mental travail with the thought warrior knowing full well that lots of deep thinking must occur. Out of the thinking comes actions and, in reality, a plan to successfully impose your *will* and thwart the *will* of the adversary. This plan, my objective, and associated action stand to alter his thinking, his planning, and his scheming before he turns them into physical attempts to impose his *will* on me. Interestingly, Clausewitz's had some views on 'how to think' about the challenge of attacking plans at their inception. As such, he tells us that

Things are perceived, of course, partly by the naked eye and partly by the mind, which fills the gaps with guesswork based on learning and experience, and thus constructs a whole out of the fragments that the eye can see.

He goes on to say that.. .if the whole is to be vividly present to the mind, imprinted like a picture, like a map, upon the brain, without fading or blurring in detail, it can only be achieved by the mental gift that we call imagination.²⁸

One of the creative functions that occurs in one's mind's eye is when and where wholes first begin to appear, congeal, and connect. People, organizations, activities, communications, data, equipment, thoughts, computing, and so forth, all start to gather and congeal. Their purpose appears as relationships, connections, and aggregations.

So, let's consider the wholes of which I speak. A whole is *something comprehensive in itself including all of its parts or elements*. Wholes can pre-exist, such as the human body, a tree, an organization, or an airplane. Or, human beings, organizations, and machines can make wholes of like or disparate elements or parts using the theory of aggregation. Wholes come together with the thinking skills of synthesis and holism. Interestingly, Clausewitz talks about the importance of wholes, coming to the mind's eye via appearances, when he tells us in *On War*,

The man responsible for reevaluating the whole must bring to his task the quality of intuition that perceives the truth at every

²⁷ Sun Tzu, 77.

²⁸ Clausewitz, 109.

point...Otherwise a chaos of opinions and considerations would arise, and fatally entangle judgment...

He goes on to tell us,

What this task requires in the way of a higher intellectual gift is a sense of unity and power of judgment raised to a marvelous pitch of vision, which easily grasps and surmises a thousand remote possibilities which an ordinary mind would labor to identify and wear itself out in so doing.²⁹

With this line of thinking, one's mind's eye must eventually reason how the adversary perceives, thinks, and plans. In addition, one has to know how his adversary views the operational context, to include the advantages and disadvantages it presents to each antagonist. Here is another thinking chore. That is, you must realize that this adversary has to think about how you think he thinks about you and your view of his capabilities and the motives and purpose behind any hostile actions. This same look into how you think he thinks must involve the pluses and minuses that the operational context presents for exploitation.

Our protagonist also has to have a good understanding of how the adversary, appearing so clearly in his mind eye's, thinks about his adversary. The mind's eye must comprehend the recipient's thinking about his desires and the awakening of his life force. Our minds must see and understand his strength of motive coming forth in his early thoughts. The mind's eye has to work with both upper and under minds to gain understanding of this opponent. As such, you anticipate how he thinks and decides about 'that what truly matters' relative to his plans to attack and win, thus successfully initiating actions to impose his *will* on us. But of great interest, the wise leader considers how this adversary contemplates violence to successfully impose his *will*. Such thinking always involves an addendum that prods us to ponder how he thinks you perceive, think, plan, decide, act, assess, and so forth.

²⁹ *Ibid*, 114.

The slide features a dark background with a central image of a handprint. The text is as follows:

Thinking Like The Adversary Thinks

Wargame Your Adversary's Wargaming

- Who is he?
- How does he think?
- What is his culture?
- What are his goals?
- What are his objectives?
- What are his resource?
- What are his constraints?
- What is his morality?
- How strong is his 'will'?

Do You Know 'How to Think' Like Your Adversary?

6/23/20

Proprietary Information and Private Property.
Property of Wayne Michael Hall. All Rights Reserved.
Copyright 2017, Wayne Michael Hall

28

Figure 21. Thinking Like the Adversary Thinks

Mental combat proves to be a constant as I ponder the future. Of course, this has been true since the beginning of man's conflicts with other men and with men who deliberate about the future. In this age, mental combat is even more important than ever. It cannot be relegated to a third class importance, as many a conflict has been and shall be decided via mental combat and pitted against adversary's who employ asymmetric warfare in response to America's overwhelming conventional force advantages. As a first step into our discussion, here's what mental combat means.

The constant multidomain, multilevel, multi-spectrum cognitive conflict or competition in which people with conflicting interests attempt to impose their *will* via superior mental functioning.

My book, *The Power of Will In International Conflict*, makes a quite a few explanations that readers should read and store in their memories. For example, mental combat exists and functions under a larger umbrella that is a wars of wits. This means as one moves vertically up say a chain of command and into higher and higher levels of operation, people and organizations at each level prove involved in increasingly larger and more complicated wars of wits.

As you try to fix your gaze on furious standoffs that sometimes occur in conflict, each side's actions prove episodic in waging mental and physical operations to grasp and leverage advantages (seven) and thus win. But there is more to winning than these episodes. In addition, as you gaze on the vista of conflicts in all vertical domains and at all horizontal levels of conflict, you can see, by using synthesis and holism, you can envision large aggregations in wars

of wits that, of course, contain pulsating, irregularly shaped bouts of mental combat stretching from cause to link to effects, but always leading back to and influencing wars of wits.

One can claim, of course, to enter our adversary's mind and know what he is thinking and preparing to do is impossible. I agree ... to an extent. The exception comes with realizing that exactness and precise prediction when competing against other human beings in a context in which nonlinear operations have such a significant influence on the veracity and truth and fact all proving nebulous at best, sets the stage for my success. I can never know with complete exactness what the adversary is thinking and subsequently, what he intends. But I can surreptitiously enter his mind, in a figurative sense, and make every attempt to think as he thinks. He could be attempting to do the same thing; therefore, keep in mind the hovering notion of duality in all that we undertake. Nor can we know with precision his reaction when we do something, or how he can initiate action and do something to cause our reaction. However, with minds that operate and think at a high level and know and implement 'how to think' mental operations, I anticipate how he thinks and intends to do. Accordingly, think in detail and anticipate his impending actions. We can call these actions causes. They link to his desired effects, or outcomes.

To perform mentally as I suggest takes knowing and thinking about the enemy's culture and how he thinks about your culture. His culture shapes and drives the all-important rules that guide his thinking and his action models. Rules shape and guide his action models and subsequent outputs. With the selection of what he considers to be appropriate models, he chooses the time and place he wants actions to kick off to cause his desired outcomes. He can discern outcome performance with several other models including, assessment models, collection models, synthesis models, and adaptation models. Intelligence analysts decompose these causes, links, and effects, turn their decompositions into observables, run collections operations, and watch for signs in the gathered data that pertinent causes, links, and effects are appearing and emerging from anonymity, either causing or not causing the desired outcome. Such discovery provides our decision-makers with the opportunity to preempt this opponent's efforts to impose his *will* at the moment of discovery or waiting, thus retaining the initiative. Such fighting is always mental and physical; however, mental generally precedes and trumps physical. Winners know how to think about their adversary and the context and beat him with their mind before the physical fighting ever starts.

Regardless of difficulty, we can learn how to think like the adversary and beat him. To think as the adversary thinks for the purpose of beating him in bouts of mental and physical combat, decision-maker's cabals (strategists, planners, and intelligence analysts) must learn 'how to think.'³⁰ One of the ways to work with this notion of 'how to think' is to enter his mind and think like he thinks. Yes, we have to enter his skin and mind, figuratively, of course. We travel in his mind and see the world as he sees it, and in particular, his perspective about himself and his

³⁰ Wayne Michael Hall, "Metacognition How To Think Redux," Unpublished Fact Paper, 2016. How to think means-an approach to thinking generally adhering to the thought processes and practices of holism, analysis, synthesis, combination, coherence, relationship, connectedness, wholes, and synergy to 1) reason, 2) conceive new ideas, 3) form in one's mind and then defend inferences and their derivative meaning and implications, 4) demonstrate the ability to judge via meaning, knowledge, and coherent views, and 5) communicate conclusions and recommendations defending the conception.

enemy (us) as we cling one to the other in conflict. So, you might ask, what are the basics involved in outthinking the adversary? After all, he seems to hold the majority of the advantages such as knowing his culture, speaking his language, holding the initiative (at least at the start of a fray), and often knowing the physical context better than us. The answer to the question can be found in this list of things that one must do to outthink their adversary.

1. Know his 14-element model for thinking about *will*, or facsimile thereof.
2. Know the kind of conflict he thinks and believes he has embarked upon.
3. Understand his thought models for: thinking, planning, wargaming, wargaming his adversary's wargaming, action, assess, gather data, analyze data, synthesize data, evaluate the synthesis, learn, share, and adapt.
4. Know the current situation and the operational, and political context in which he plans to compete. Each changes because of act, react, and counteract fighting between opponents, nonlinear characteristics coming to play and influencing each side, intended data collection, and the arrival of unintended data inputs from the operational context.
5. Understand his previous behavior, his culture, his world view, his travel in and out of his country, education, his views of and proficiency in technology. Understand how he thinks. Discern his tendency to commit logic and bias errors, and because of duality's influence, think about how he thinks you commit logic and bias errors and how he might take advantage of such errors.
6. Know his co-evolution and adaptation cycle and the intelligence system he uses to collect assessment data of sufficient quality to evaluate his actions and adapt. Know his belief in recursion and how the recursed data influences his thinking and decisions.

We can also examine our perspectives and how we think by considering and using the following four thoughts. First, recognizing our adversary's unpredictability suggests the need to be agile in mind and organizational processes. But this adversary can do what you don't expect. Falling victim to the unexpected causes cognitive dissonance. This means in our work we must be agile and take advantage of unexpected changes and be aggressive and anticipatory to gain the initiative.

Secondly, understand that we compete in a context that houses two kinds of systems. One system involves what people label as linear systems. Quite stable, their outcomes prove predictable, with no reason to adapt. An example could be an electrical system, or a water and sewage system. Unless equipment fails, neither change nor turbulence raise chances for the play of sensitive variables, friction, and randomness. In linear systems, interruptions prove rare if not improbable. Monitoring such stable systems allows us to know and protect linear systems relative to the conflict, context, culture, and, of course, the adversary. Or, if they are destroyed in fighting, they remain important for quality of life of the affected population.

The other kind of system is nonlinear. As we have discussed in this primer, nonlinear systems appear impenetrable and are, for the most part, turbulence prone, unpredictable, packed with sensitive variables, and full of big and small complex adaptive systems (CAS) that co-

evolve with their competitors and adapt relative to action, assess, and adapt paradigms. They co-evolve with action followed by rigorous assessment, collect data pertaining to their view of outcomes of actions occurring in the operational context, evaluate assessment data, learn, and adapt. As a quick review, other characteristics of nonlinearity include small inputs can lead to huge and unexpected outcomes; sensitive dependence on initial conditions; importance of context; difficulty in working with causes and effects; presence and influence of aggregations; presence and influence of tendencies; presence and influence of friction; presence and influence of randomness; and operating on the edge of chaos.³¹ Many other characteristics of nonlinearity appear in the book.

Third as I gain comprehension of my adversary and operational context and prepare for mental combat, I sense and recognize the presence of influential sensitive variables; But then what should be happening? As a first step, I think and come to realize the following ...

- In contexts in which battles of *will* occur, nonlinear systems and their influences become important. As one reason for importance, variables prove plentiful and influential.
- If a variable turns sensitive, it can cause unexpected and sometimes immense change. This sensitivity, opaque, appearing and spreading as a fog, grows and becomes an ignitor. The ignitor is the cause for the propellant to appear as an important aspect of a fight for supremacy of wills.
- Thus, we find an interesting force is at work. It is an expulsion of dormant energy. As variables become sensitive the potential for the propellant to turn from appearance into actuality, the energy expulsion happens. I call this expulsion, the propellant. It gets the aggregates and aggregations moving.
 - o What brings out this force? It is attributable to one or more of many probabilities (causes) people select for the effect (degrees of sensitivity) that stimulates the variable of concern. Owing to its potential connectedness with other variables and phenomena such as aggregations and tendencies, it becomes sensitive, contagious, and highly influential.
- With this sensitivity is a probability that something is likely to ignite aggregations of similar and dissimilar aggregates and aggregations.
 - o The aggregations start moving and conjoining with other aggregations. The aggregations connect with other aggregations and eventually form a massive whole that can rage unabated until it extinguishes or exhausts itself. It is 'glue' that bonds the aggregates and aggregations into wholes.
- The causes for the effect-the variable in question becoming sensitive-exists in the operational context. Thus, the effective thinker searches for these loitering causes in question, and if found, they locate, and neutralize them. The effective

³¹ M. Mitchel Waldrop, *Complexity* (New York: Touchstone Books, 1992), 230-231.

thinker seeks, finds, and neutralizes the potential for the variable to become sensitive before it happens.

Fourth, a reader of my book can find ways to overcome adversaries via thought models, concepts, and methods of problem solving by setting conditions for success in mental combat and wars of wits. I reviewed one of our thought models in this section-36 Elements of Strategic Thinking-that an adversary uses in part or in toto. Continuing on with the thought, adversary thought models help our minds consider multiple projected realities. These realities, composed of understandable characteristic actions, such as the appearance of causes tethering to links, that reach out for one or more effects, interactions, counteractions, transactions, and probabilities, help us discern what our adversary's aim, goals, objectives, strategies, tactics, and so on, could be after as the model plays out. The model, restless and in motion, adapts to vagaries of operational context and the projected or unexpected actions of opponents. We never use the model in insolation from the influences and quality of data, the arrival of purposeful and unexpected data from the operational context, and the influence of friction and randomness thanks to the omnipresent presences and influences of nonlinearity. Now, it is time for the next thought model, and it is of great interest.

Accordingly, we'll now discuss a simple model that any adversary has to use, in part or in toto. Studying this model can help decision-makers, strategists, planners, and intelligence analysts learn 'how to think' deeply, ably, and of sufficient quality to engage and win in any contest of *will*.

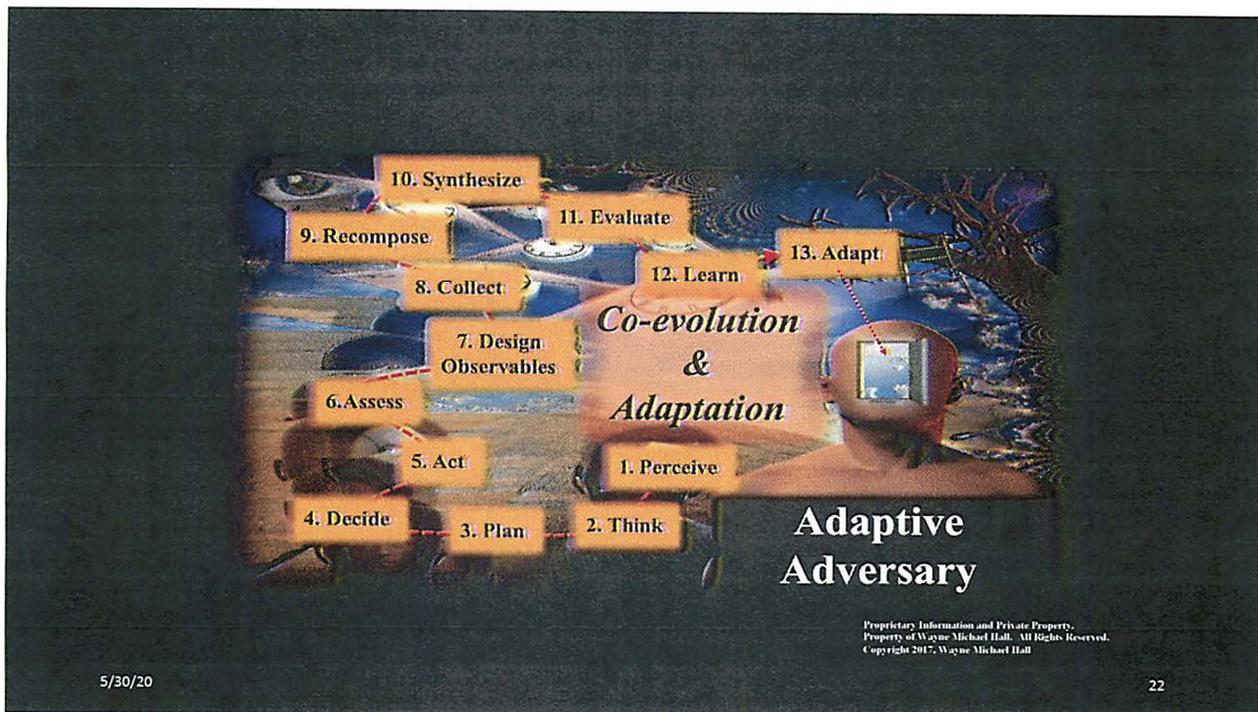


Figure 22. Thinking Model for Adaptive Adversaries

This is what any complex, adaptive system (CAS) does, whether individual, organizations, countries, aggregations of people and organizations and machines competing in a wide variety of conflicts. All struggling adversaries have some interesting commonalities. For example,

1. People want to win.
2. People do not want to lose so, in many cases, they avoid losing.
3. People impose their *will* on others for one or more distinct purposes.
4. The receiving people, the targets of impositions of another's *will*, either capitulate or resist.
5. Resisters employ a calculus to help them think whether or not to contest an attacker's efforts to impose his *will* and win.
6. If a resister refuses to capitulate or to strike a 'deal,' a conflict unfolds. Then the resister's version of the 14-element model of *will* kicks in full blast.

Now, I ask that you take a look at the visual above. It is an easy model to follow because it is numbered, 1-13. I venture to say, all people in struggles of *will* follow some resemblance of this sequence if they hope to be sufficiently organized and adequately cerebral to design and aggressively seek aims, goals, objectives, and so on. The model could have either more elements

or some could be taken away. These elements and their sequencing are hypotheticals, but I believe in any contest or clash of *wills* most of these elements appear in various forms or functions. This model reflects my emphasis on co-evolution and adaptation with its cultural rules and thought models. Co-evolution always involves actions, assessing outcomes of action, evaluating outcomes, learning, and adapting. And, recursion is at work and poses as an important function. It provides assessment data and intelligence collection is its instrument. Each competing organism attempts to perform such tasks better and faster than their adversaries. They strain in a race to successfully impose their *will* on their foe who attempts to do likewise to them.

The sequencing of necessary elements in thoughts come out loud and clear. We go through some kind of a thinking journey in any struggle of *wills*. What you see in the visual above is how I imagine people to think in such a struggle. Thus, in my view, one must use this model to hone, if not guide their thinking. But more importantly, the model helps you know where, how, and when, and in what force to attack your opponent in mental combat and, if on the defensive, anticipate and thwart an adversary's attack on you. The model advocates attacking your opponent's processes and the steps necessary to impose their *will*. To win a war of wits against a tough, smart enemy, I suggest that you must use a semblance of this model and if you comply, you will profit. Let's talk about each of the elements just a little,

1. Perceive. Understand how a person perceives and what influences the purity of this snapshot of sensing relative to time. Desire makes its appearance at this particular point. Of interest, it is in one's perception and corollary realm of imagination where desires roam, and life-force and resolve come into being. Their appearances influence the being in question by bringing one or more distinct wants or desires to light from the dark, and into focus.
2. Think. Perceive does not mean think. We think about what our senses have perceived, scoped, or received by way of data inputs coming to us via the positive notion of seeking. Or, if a person is not active and instead passive, the operational context pushes data to them like it or not. People think and machines process to turn data into a semblance of meaning in information. We think to synthesize information into knowledge. We think to wargame. We think to draw and defend conclusions. We think to present and defend recommendations, and so on.
3. Plan. After thinking, one plans. At its simplest state, after a desire transforms into life force, the thinking mind asks: How can I satisfy my desire? Thus, a plan is born. It involves some semblance of

... strategic aim, goals, objectives, constraints, resources, strategies, tactics, purpose, *will*, 14 elements, operational context, advantages, disadvantages, pressure points, decisive points, centers of gravity co-evolution, adaptation, time, risk, sweet spots of decisions, ISR, observed/observer relationships, condition setting, deceive, strength of motive, what truly matters, duality and pendulum thinking, wargaming the adversary's wargaming, 13 element model

to enrich his thinking, logic errors, bias errors, understanding of nonlinearity, and engaging in Matrix War.

4. Decide. Decision makers consider cost/benefits and risk/opportunities. Then, when armed with good recommendations and support by way of evidence, discernment of truth, and facts, the decision-maker approves or disapproves the plan. Normally, a good leader tweaks his plan as it forms and progresses. This is where one finds strategists, planners, intelligence people, and the leader talking about the solidarity and purity of the purpose for the upcoming impositions of *will*. In the process, they always consider outcomes relative to nonlinearity and in particular sensitive dependence on initial conditions, small inputs leading to huge outcomes, and the immense power of aggregation theory coming into being. The leader always challenges his brain-trust's view of the adversary, thinking, the sweet spot of decisions, outcomes, aftermath, potential for aggregations, co-evolution, adaptation, assumptions, wargaming, and wargaming the adversary's wargaming.
5. Act. At the heart of an imposition of *will* we find two aspects-capabilities and strength of motive. One can gain an understanding of capabilities as usually they come with the baggage of physicality and being additive in some way. On the other hand, decision-makers, strategists, planners, and intelligence people always find nothing but trouble as they try to measure or predict strength of motive. Its inner working comes from within humans and always proves iffy for accurate anticipation and forecasting. Compounding the problem, strength of motive feeds energy to other elements of *will* such as passion, sacrifice, perseverance, determination, advantage, disadvantage.
6. Assess. We prove to be complex adaptive systems or also known as CAS. As such, we compete against our enemies. They are, of course, CAS. Thus, when I and my foe act, each side must judge how well it is doing relative to its opponent's and to its aim, goals, objectives, and so forth. Thus, the organism assesses activities occurring in the operational context via imposition actions, responses, changes in the currents of the context, inputs of data, some wanted and some unwanted.
7. Design Observables. Advanced and skilled intelligence analysts design, direct, interpret, and synthesize data, information, and knowledge. They decompose their requirements, study the context, and develop observables for use in their collections systems. They task collections to work at the right time, right place, right activity, and to seek the right observables tied to data, information, and knowledge gaps. Assessment requirements guide data 'gathering' and the offspring suggests further collections actions.
8. Collect assessment data. The collections and analysis partnership work as a connected entity in planning for, executing intelligence collections operations, assessing outcomes, and readying collections for the next cycle of data collection/recursion. The produced assessment is relative to one's actions to impose his/her *will*, or to deny another person's efforts to impose his *will* on you.
9. Recompose data into information. As data arrives, machines and people recompose arriving data into information. Information has meaning but is often neither organized nor combined to a high level of quality.

10. Synthesize information into knowledge. Analysts synthesize information into knowledge. With current and accurate knowledge one can lower risk. But it takes time for the human mind to synthesize information into knowledge. Also, knowledge has a short timeline of accuracy and relevancy so decisions on synthesized knowledge have to be quick and well-aimed.
11. Evaluate the knowledge. Leaders and red team people challenge assumptions and the thinking of intelligence analysts. They must answer the question-Does this product, conclusions, and recommendations come from sound deep thinking?
12. Learn. The conclusions and after action reviews move around and help other people of similar ilk to correct what might have been wrong or use the knowledge coming their way to help in their own fight.
13. Adapt. Then, the organism adapts keeping the overarching goal in mind and seeking to adapt better and faster than their adversary. Then, the organism does in fact adapt and change or move.

By now, I suggest that this visual is self-evident, in your minds. But, in my experience people sometimes fail to think about their own thinking like I'm talking about. To pile on, people don't think about their adversary's thought models relative to their own thought models, and the *battles over the quality of thinking therein*. This kind of mental combat is important. Therefore, mastering mental combat and actually forcing one's mind to perform these functions in a disciplined way enables you to win in any domain, at any level of conflict, at any time, and at any place. Using these methods of thinking and acting provides you with the wherewithal to win in mental combat and wars of wits. Such thinking contributes to your leader's *will* to ascend to impose their *will* over one or more of their adversaries. But I hear some grouching. A few readers or listeners whisper that there is more to this problem than easily meets the eye. I say yes, there is more, and I'll talk about the 'more' now.

Our situation proves more that it appears to be if you once again ponder the influence of culture on your opponent's thinking. In particular, think deeply and find current knowledge about your adversary's religion, attunement to law and order, and his public and private thoughts. Also know his societal rules and their influence on his thought models for action. Consider your opponent's education, circle of friends, world view, travel experience, work, family, social mores of the context the opponent grew up in and in which he worked or works. Consider his world view and travel experience. How does he view strangers? How does he view people who are not a part of his religion? How does he treat minorities such as women? Consider his view of technology and how adept he is with both phones and computers as well as his tendency to use the Internet for business and for fun.

These are but a few of the questions and wanderings to consider, as answering them and many other questions about our adversary can result in success or failure. Great leaders do think this way-the way of this 13-step model. But our challenges in mental combat and wars of wits prove so demanding that we cannot just leave it up to great leaders anymore. They need very smart helpers who are trained and educated to meet the challenges of modern struggles over *will*. I call them, the cabal (decision-makers, strategists, planners, and intelligence analysts). In my

view, it is imperative for decision-makers and their cabals to think about the adversary, how he thinks about *will*, and how he thinks you think about *will*.

The 13 element thinking model for adaptive adversaries model is now 'at home' in your minds. As one of the book's big ideas, the model helps us think about the adversary's view of imposing his *will* and how we need to think about ours and his views of *will* and the ensuing struggles over its ascendancy. While the visual and its 13 steps seems obvious, it is difficult to do. Why?

- First, our own biases, egos, backgrounds, experiences, education, cultural influences, arrogance, values, and so on get in the way.
- Then, our thinking becomes clouded by the veil of illusions we talked about before. Remember, this veil obscures reality with illusions, such as an illusion of personal grandeur.

Our troubles come forth with discerning how we think or do not think. We sometimes struggle to think clearly and well because we become fixated on our intentions at the expense of recognizing that a foe-read resistance-exists. The foe and the nonlinear context cause unexpected disturbances that jar our minds and remind us that we must understand and adjust as needed. Additionally, know well that a given foe can parry your impositions and cast his actions to win and render your loss.

What do we need to help us learn how to think about our foes to set the conditions for successfully imposing our *will* on any foe, any time, any place, in any domain or level of conflict? As I have said repeatedly, the answer is to learn 'how to think' using thought models, professional Red Team people who challenge our ideas, assumptions, identify your logic and bias errors, and lead you to self-examination via introspection. Also, learn to think holistically through integration, horizontal thinking, and learning how to use the art of synthesis. Technically, we need realistic synthetic environments, very smart artificial intelligence driven avatars, powerful and linked computers, and players for our wargaming (our wargaming and his). Also, as I have said many a time in this discussion, winning can be difficult. To win in mental combat and wars of wits, one has to get a grip on presence and influence of the culture and ethnicity of our adversary. I deal with this subject throughout the book and in particular in one chapter-Chapter 14-The Thinking Adversary.

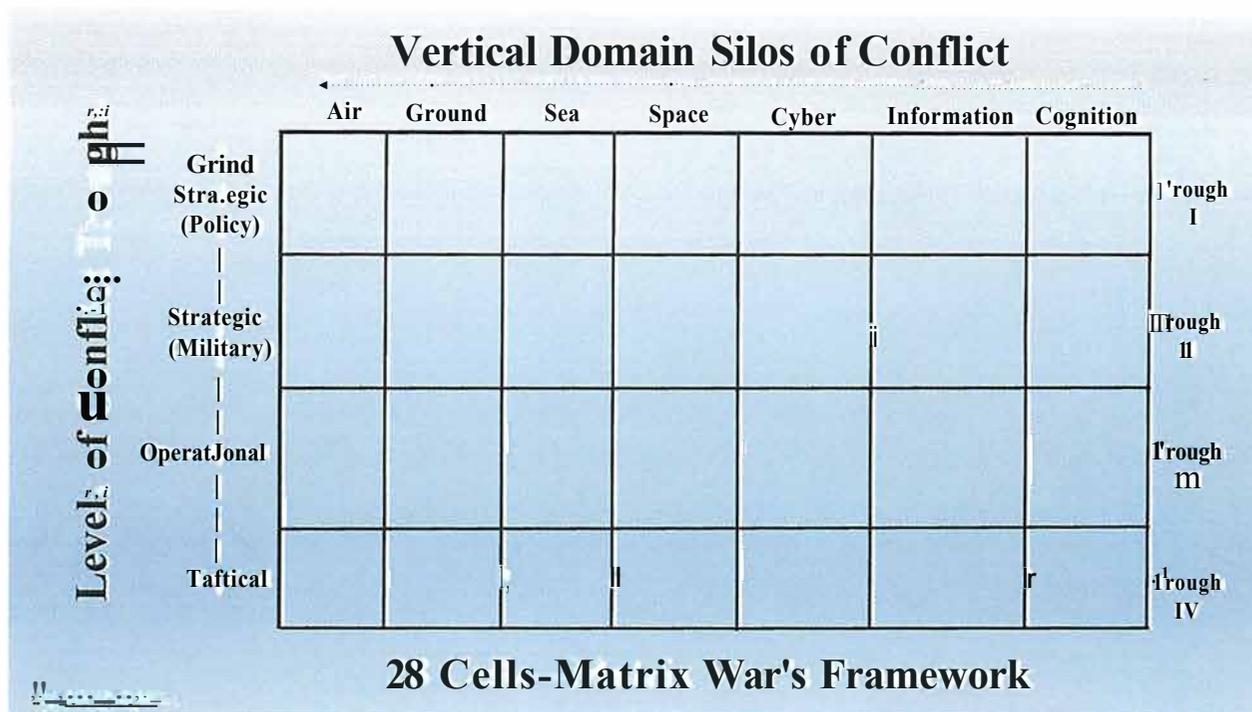


Figure 23. The Cells of Matrix War

Something new came to my mind as I wrote the book on *will*. The new idea is Matrix War. In brief terms I'll explain the conception to you. As I thought about conflict and struggles on modern and future fields of strife, I found that I could explain wars of *will* and clashes over it in another way. A matrix appeared in my mind. The matrix has 28 cells. The cells appear when I take seven vertical domain silos (air, ground, sea, space, cyber, information, and cognition), and cause them to slice into four horizontal levels of conflict troughs (tactical, operational, strategic (military), and military (policy)). 28 cells appear. Matrices occur at a focal point of conflict—it is an aggregate. Then, the aggregate of matrices unfold into larger matrix aggregates and combine into an aggregation of matrices. Many aggregations exist in a supra-aggregation. I believe this idea has great potential and is so influential for winning bouts of *will* that Matrix War is one of the big ideas in my book, *The Power of Will In International Conflict*. Yes, the subject is abstract. Yes, what I have done is but a start, but in the book, I started the process of turning abstract into pragmatic thought.

Now for a short explanation. As I pondered the phenomenon of *will*, I found a need to be more expansive and deeper in my thinking about conflicts—why, how, and where they occur. I dove deeper into the well of introspection, searched my memory, and examined my thinking. Since discovering my shortfalls, I have worked hard to improve and thus explain and present what I had missed, because the subject matter is important. The absence of two thoughts limited my comprehension of conflict.

First, struggles over *will* always break into connected parts and pieces. For example, disaggregation breaks apart the wholes of say the sub-elements of weapon systems. We find myriad sub-systems, functional elements and even objects appearing as, vehicles, tanks, helicopters, aircraft, communications, missiles, radars, internet, logistics, humans, robots, sensors, computers, data, maintenance functions and elements, command and control organizations (physical), and knowledge production organizations (virtual). Imagine hiding the parts and pieces of 'wholes' as they appear after breaking apart or disaggregating the whole. Breaking large wholes into increasingly smaller wholes suggests that the smaller could be effective by themselves in some cases, such as an anti-aircraft surface to air missile, but the single weapon is much more formidable when it works as a battery of six or nine such weapon systems. Even greater capacity comes with aggregating of the battery into a battalion and a battalion joining with other battalions to become a regiment and so on. Greater and greater effectiveness comes forth when all of the distributed elements come together, act, then disband. This conjoining and disbanding occurs in an orchestrated and synergistic way. Upon examination, we find a transmutation of wholes from a state of separateness, to a state of wholeness, and then moving back to a state of separateness.

Conflict occurs not as a huge whole but in a scattered sense, in any context. The capability of this scattering and congealing sequencing of aggregates and aggregations changes from disparate to a functioning whole on beck and call from a parent synergizing and synchronizing headquarters via command and control. The aggregation is the connection and the actual parts of the whole start as separated but connecting into a uniting and functioning whole. The parts and pieces await the call to gather-physically, electronically, logistically, doctrinally, and sometimes via mission type orders (Auftragstaktik³²)- on call. But as I mentioned earlier, the scattered nature of wholes means they must converge, physically or via non-physical means (electrical, communication signals, digits) to optimize striking as a synchronized, total force. This combinatory whole, of minds and organizations, machines, and the elements of which I speak, senses its vulnerability even when moving separately to unite and operate as a whole. All people and their machines of the disassembled whole know they are much safer when dispersed. They know their enemies are on the hunt to find these distributed parts and pieces of varying sizes of wholes. If the seekers find the hidiers and observe as they start coming to being in a whole, then a cause connects to a link that connects to an effect and becomes a greater vulnerability because of its connectedness. Thus, fake disaggregated systems and their parts work as part of a deception plan to fool the seekers. Accordingly, the parts and pieces of the wholes under our examination, live as a part of a larger whole, which leaders assemble and perform a mission and prove powerful yet vulnerable when so assembled, yet safe yet weak when separated and hidden.

Regardless of danger, parts and pieces of disassembled wholes, come together at the right place and time, achieve a state of synergy, act with optimal efficiency, and disband when practicable but usually quickly, after conducting an act such as firing a surface to surface missile (SSM) or conducting a connected effort while distributed but still an operative whole that command and control communications performing the connective act via electrons. The meme,

³² Auftragstaktik-mission orders, decentralized planning, latitude to make decisions and do what is necessary at the point of conflict as long as said decisions and actions are within the higher commander's intent and concept of operation.

move divided and strike united, disband, describes the scattered nature and build of a whole that isn't antithetical to the whole's purpose, capabilities, and strength of motive. After accomplishing its mission, as a unified whole, disaggregation occurs and the whole rapidly disassembles and hides in the cell of origin or they move their parts and pieces to adjacent cells. The parts and pieces of the whole that is a mobile surface to surface missile, for example, could be found in numerous and sometimes odd places. The parts and pieces of systems could be found in multiple horizontal levels of conflict troughs and in several vertical domain silos. The connecting pieces on all sides in conflict of *wills* purposefully converge or careen or even disperse, and sometimes do so by accident owing to the appearance of Clausewitzian friction.

Second, in my judgment, the US military needs to expand the five domains now in place serving as a theoretical construct for doctrine. Today, the United States military recognizes air, ground, sea, space, and cyber domains. While I leave the existing five domains (air, ground, sea, space, and cyber) to survive, two domains are missing-information and cognition. Adding these two domains enables accurate and inclusive vertical sequencing sufficient to portray and synchronize actions in the cells. And who can deny their increasing importance? Note, first comes data, through recomposition (man/machine work) data becomes information and it becomes knowledge through synthesis. It is with knowledge that one wants to make decisions, as risk is the lowest it can be. But the problems with knowledge occur when it is outdated, fraudulent, or too time consuming to be practical. Leaders making decisions with data often find their outcomes perilous, with high risk because the data in question is often wrong. But the positive aspect of such decisions is they can occur quickly. Accordingly, leaders making decisions at the tactical level must think about a constantly operating cost and benefit relationship. Attendant tradeoffs drive decisions as well as levels of risk and time available.

With this construct, one can either stimulate or limit the levels and intensities of conflicts even when acting as partial, complete, or scattered small wholes belonging to larger wholes, as I introduced earlier. To reach this point, I recognize the presence of an interaction that piques my interest. It has potential for discovering and neutralizing an adversary and protecting our own decision-maker. Let's think on this possibility. I see how my adversary uses the parts and pieces of his systems as a whole, e.g., to use radar to acquire a target, to use one or more missiles to fire, communicate with command and control, resupply missiles, refuel vehicles, provide security, provide maintenance of the computers, radars, vehicles, launchers, security vehicles, feed the troops, provide medical care for the troops, provide clothing, clean the troops, provide potable water, train for increased proficiency, physical exercise, and so on. The parts and pieces of wholes, physical and functional, displayed as micro-parts of the whole remain must train to be proficient in aggregating and disaggregating again and again.

I raise my mind to a higher level of abstraction and visualize the intersection of vertical domain silos with the horizontal levels of conflict. I think of this process as 'scythe cuts (attributed to the German General Officer, Eric von Manstein),' as 19th century farmers used to do to cut ripe wheat or barley and start the processing of taking grain to markets. Now, I ever so clearly envisioned seven vertical domain silos slicing into horizontal levels of conflict troughs-always four to my way of thinking. In these 28 cells, struggles occur. These cells exist in all conflict. Also, no matrix lives alone. They always unfold into larger matrices and enfold smaller matrices. The actions within with its expended energies cause the matrices to rotate, change in

importance, conduct actions in their respective cells, cause influences and subsequent change, and still maintain their connectedness with one another.

The vertical domain silos and the horizontal levels of conflict troughs exist as living entities-shimmering and energy-emitting wholes gathered together connecting to larger wholes and smaller wholes. Aggregated matrices exist, some large, some small, but they always connect to other matrices. With more deep thinking, I envisioned the Matrix whose cells house conflicts. Within the fights going on in particular cells, I found life-force, purpose, strength of motive, capabilities, determination, perseverance, advantage, disadvantage, passion, sacrifice, impositions, actions, assessment, adaptation, and timing to be drivers in the size and duration of these clashes within and throughout 28 cells. This is Matrix War.

Next, let's back up and think about the matrix of which I speak in its most basic form.

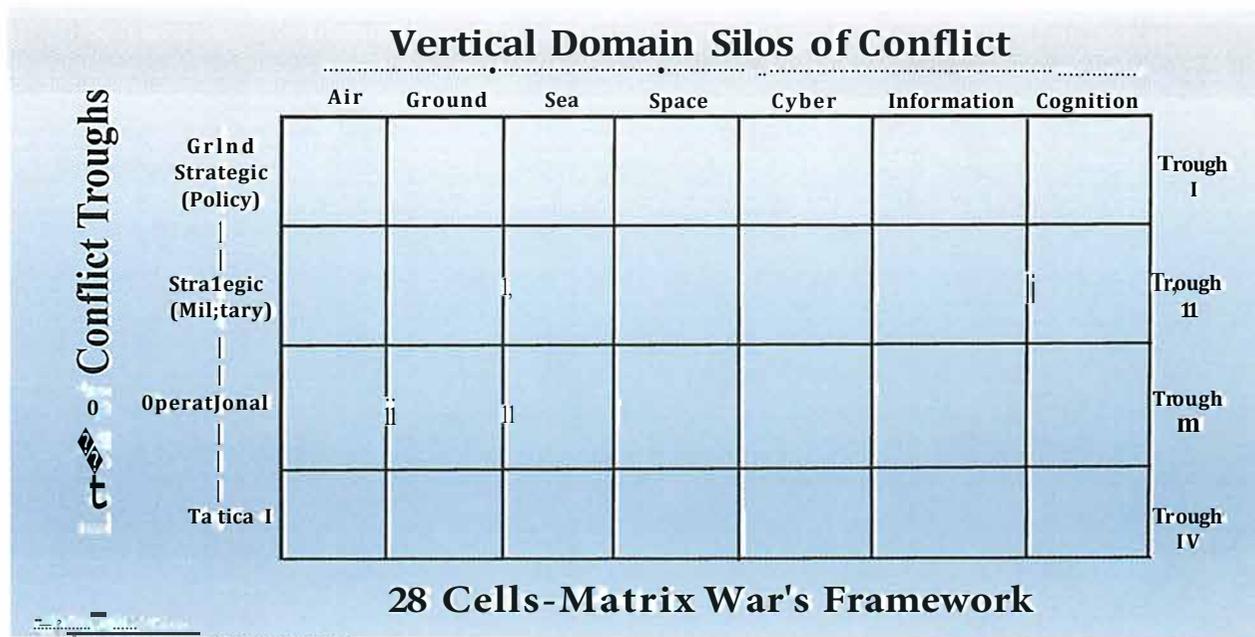


Figure 24. The Basics of Matrix War Relationships

What you see here is the matrix-a 7 vertical domain silo schema to understand battles over will-air, ground, sea, space, cyber, information, and cognition. The vertical domain silos cut into the four levels of conflict and form 28 cells. Information's importance is obvious owing to its relationship to quests for meaning and knowledge to foster good decision-making. Also, information is imperative for psychological operations and deception in the social media age. Information comes from data that comes from the context or that one gathers via its intelligence collections systems. Information can become knowledge via the higher level cognitive function that is synthesis. This combination and sometimes transformation--data, information, and knowledge--and how they affect decisions, actions, assessing actions, and adaptation proves important in winning any conflict. How a combatant gathers data, validates data, and uses data in a transformative process to validate or develop new or use existing knowledge. This process can lead to information superiority and information dominance. Quality though becomes important to

winning in this fight for superiority and dominance. Accordingly, I designed this process to enhance better and faster decision-making for acting, assessing, and adapting than adversaries. It follows that information earns a place as a full scale domain because of its influence on outcomes of conflict.

Closely related to the transformation of data into information and information into knowledge to feed decision-making, I see cognition shining ever so brightly. It is, perhaps a bit more obscure than information but important all the same. Cognition means, according to the Oxford University Press,

The mental action or process of acquiring knowledge and understanding through thought, experience, and the senses.

In reaching a state of high cognition, people participate in higher-level thought via combinations of synthesis and analysis, holism, relationships, integration, fragmentation, connectedness, fragmentation and coalescence, or combinations therein. Enactment of these elements of cognition involves 'how to think,' and connects with 'what to think,' conjoining the two kinds of thinking a whole necessary for training, learning, perceiving, thinking, planning, assessing, and adapting.

Cognition is the key in winning struggles for ascendancy of *will*. Because of the importance of decisions and how thinking affects the quality of judgments, I imagine battles occurring over the quality of thinking. With this kind of battle, opponents seek to denigrate their opponent's quality of thought and cause a derivative shock in calling into question the quality of knowledge. Questionability comes by casting doubt on the quality not only of thinking but the relevant data, information, and knowledge streaming into human portals via social media and via disinformation, misinformation, and deception. It comes with casting doubt on quality of evidence, which could cast doubt on quality of truth, and thus cast doubt on the quality of facts.

Battles in mental combat, in wars of wits epitomize struggles for superiority of *will* that can only increase in intensity and importance over the next 100 years. Our foe's often seek conflict and competition in the 'gray zone,' with 'little green men' blending into multiple cultures around the globe. They employ asymmetric approaches. Their methods include using disinformation, misinformation, deception, cyber-operations, altering assessment data, information operations, all to gain information superiority. Also, cognition, or thinking, and metacognition link to Russian Maskirovka, loosely defined as information operations and in particular sowing the seeds of chaos, disrupting elections, and planting bad data and information in the media, and deception. The Russians and our other enemies prove adept and consistent in all of these types of information operations. Said another way, Russians, Chinese, North Koreans, Iranians, and drug cartels practice deception and manipulation of America's thoughts, perceptions, and even emotions.

The elevated importance of social media is self-evident as it serves as a carrier for these practices. Social media fills and influences people's minds via data in America and around the world. The search for valuable data, information, and knowledge, heightens the importance of both information and cognition. Part of the challenge lies in how fast data changes, meaning the potential appearance of truth changing, thus whiplashing people's understanding of truth and

becoming cynical about the truthfulness of any data, information, and knowledge. Even now, as we speak, the struggle for information superiority occurs in matrix cells where vertical domain silos and horizontal levels of conflict troughs intersect.

Thus, I submit that we have a new normal. It is mental combat, operating under an umbrella—a constant wars of wits. On the move, our foes seek ascendance to the pinnacle of conflict to control the information and cognition domains. Conflicts of this nature involve struggles over cognition—that is outthinking one's foes. Accordingly, a satisfactory outcome is my intent. Aptly, America must learn to outthink its opponents in such contests. Our thought warriors must learn 'how to think' (see this primer's earlier definition of *how to think*) and thus have the mental capacity to engage our enemies in mental combat and win. This situation prevails not just at the present but in the future. This view shows up experientially as fact and truth, particularly when one understands the intensity and immensity of struggles for ascendancy of *will* as America fights Russia, China, drug people, terrorists, and other asymmetric foes. The implication is quite simple. Because of the importance of decisions and their derivative thinking, how one co-evolves, acts, assesses, adapts, thinks and reaches decisions shows as fair game in any conflict. This means our people learn must 'how to think' and how to learn by way of education, organizational learning, mentorship, self-directed learning via life-long learning.

As a new thought, consider the power of this notion—cognition is a weapon system—same with information, but admittedly, this thought is original. But it joins with the notion that intelligence is a weapon system, fully capable of causing mental, emotional, and physical outcomes. In this kind of war, within the cells of Matrix War, I can mass, maneuver, swarm, and disband eight distinct things—minds, sensors, computers, data, data conduits, knowledge, organizations, and virtual knowledge environments (VKE). People at higher levels orchestrate a larger war of wits at the same time—mental combat functions as a sub-element of the larger whole of continuous wars of wits and ensuing struggles and competition. China and Russia, proven masters at melding information and cognition into their national aims, goals, objectives, and strategies, know the importance of cognition and information. They seek superiority in thinking, and they manipulate the information of all of their competitors. They want their foes to acquiesce and capitulate to their long view—cultural, military, and economic superiority, to name a few of the kinds of superiority they seek. They use patience to win endless battles in all seven domains and four levels of conflict, competing for ascendancy of *wills* with America. We must meet them on the new field of battle and strife that I describe in my book of *will* and in this primer and beat them.

As I view the matrix and gaze upon these 28 cells where struggles of *will* occur, I see how people can be confused, as their matrix appears in isolation. But in truth, matrices exist and connect to one another. As such, one finds a high degree of connectedness, indeed entanglement, among the domains and levels of conflict. Entanglement means distant cells instantly sense disturbances in other cells even when the disturbance occurs in vertical domain silos at different horizontal levels of conflict troughs. And, as I take another look strange phenomenon, I find the matrices with disturbances occurring, but I also see how they entangle with other larger and smaller matrices. Again, all either unfold into larger matrices or enfold smaller matrices thereby creating aggregations when conditions in the operational context suggest or demand congealing

into these wholes. Alas, once again, combatants recognize aggregation theory³³ as important in our understanding of Matrix War. Many connections exist in Matrix War, and they prove important. Thus, we have to learn this theory of connectedness and apply it to conflict. As a next step in our journey of learning, we'll talk about connectedness in Matrix War.

A connected world means-joined into a viable and thereby operable whole. Said another way, I'm speaking about entities or thoughts linked one to the other in purposeful agreement. Know well this phenomenon: that is to say, parts, pieces, people, organizations, machines, infrastructures, and so forth link with one another to set the stage for coherency of a whole. Five kinds of links exist and prove essential for connectedness in our thinking. They are cultural, functional, technical, thought, and organizational links. The links serve as binding agents in our whole. The parts, pieces, organizations, people, and machines, etc., each a small whole in their own right, also exist as in situ assemblages, thus proving to be important elements of the larger whole of which we speak. If this whole under our gaze fills with energy, purpose, and strength of motive, then when assembled, the parts, people, organizations, and machines live in and govern the whole of connections and thrive. When this whole merges with time, place, and intent, the process needs a state of coherence to occur, then it can empower one or both sides in any struggle of *will* with high-level and high-quality thinking.

Coherence depends upon quality of actions, processes, individual and organizational thinking, and of data, information, and knowledge. Any fighting force must seek this state of being. When one reaches a state of coherence, the whole in question functions optimally. Coherence allows a smoothness in how parts and pieces of the whole function. Coherence allows the whole's total capabilities to come forth in a synchronized way to inflict maximum force on an adversary's resistance. Coherence sets the conditions for synergy among the parts, pieces, objects, sub-systems, micro-aggregations, macro-aggregations that comprise a high quality, relevant 'whole.' It is the coherent whole in which one side or the other effectively uses to accomplish their aims, goals, and objectives to successfully impose their *will* on an enemy or to deny his impositions. Expect each opponent to disturb the opponent's state of coherency. Such fights occur in the cells of Matrix War.

OK, all should be well in your minds. So, let's take a deeper dive and dial up some cognitive dissonance! Here we go! The 7 vertical domain silos of conflict connect: 1) among themselves vertically, and 2) with the four strata of Horizontal Level of Conflict Troughs. Connectedness first occurs in one's mind as the mind visualizes what 'could be' by way of connections. I'm speaking, of course about connections within the matrix cells and the actions that create outcomes. I'm also speaking about connectedness of causes leading to effects. Pushing ahead even further, I'm speaking about the links connecting causes to effects. You must know this kind of connectedness because it is the key to preemption and dominance in struggles for initiative and other advantages.

³³ Wayne Michael Hall and Gary Citrenbaum, *Intelligence Analysis How To Think In Complex Environments* (Santa Monica: Praeger Security International, 2009), 277-299.

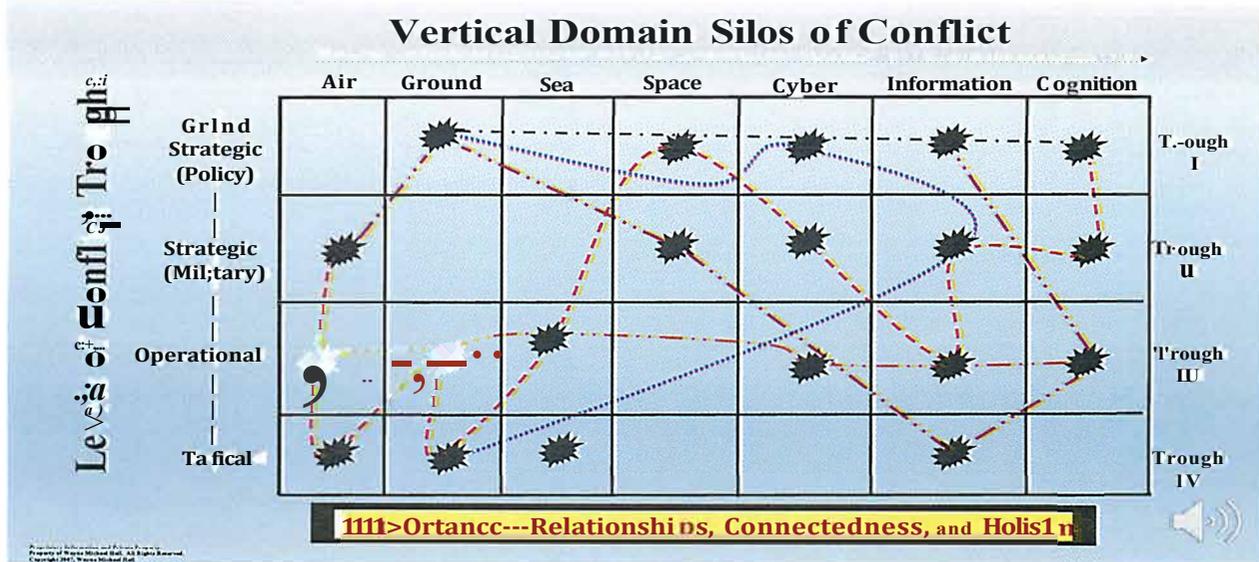


Figure 25. Relationships In Matrix War

If something happens in a cell, a rippling effect also occurs among different Horizontal Levels of Conflict Troughs and Vertical Domain Silos. When an event at the Tactical Level of Conflict Trough occurs in a particular Vertical Domain Silo in which it resides, released energy affects the Strategic Level (Policy), in the same Vertical Domain Silo and in other Vertical Domain Silos to which the first silo connects. To understand Matrix War, imagine this motif: wind-driven rainfall-actions occurring up, down, sideways, diagonally within the cells (intersection of vertical silos with horizontal levels of conflict). Actions assume a new appearance-a snake-like curvature moving, influencing thinking and decisions.

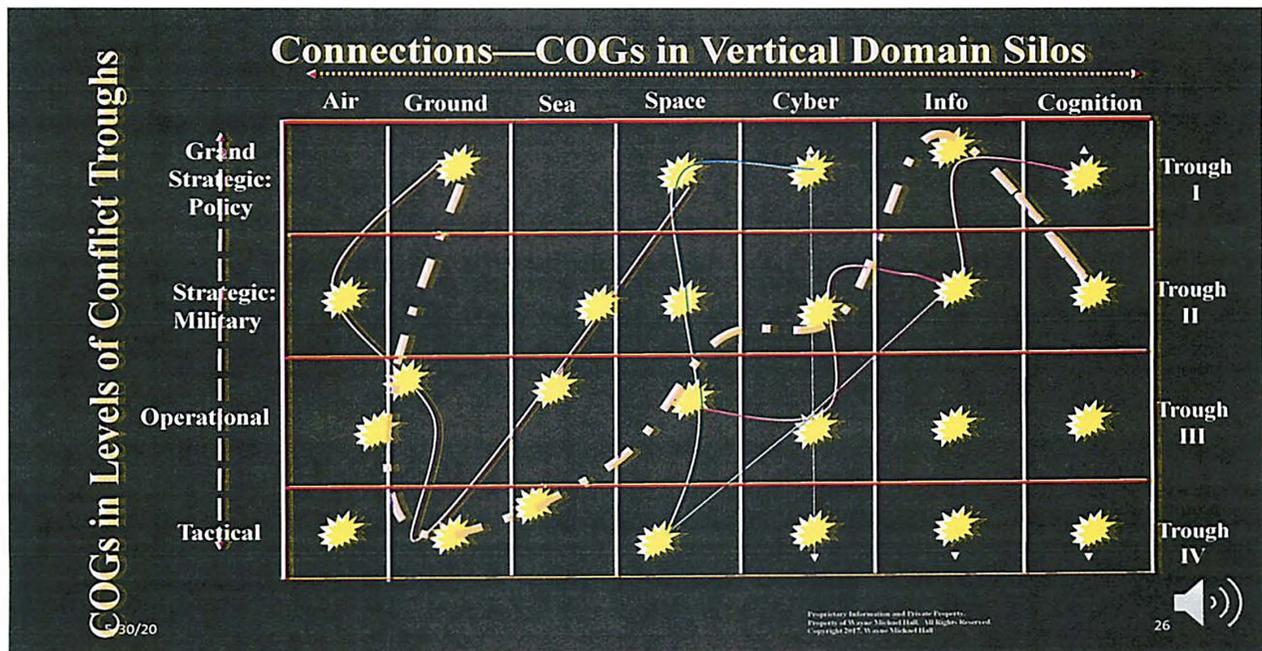


Figure 26. Connectedness Among Centers of Gravity

It is a metaphor for understanding both connection and the subsequent potential for influence. As you look at the graphic, know that the snake-like curvature (dashed orange) shows in many disguises. Its connections come forth first as a desire for some kind of effect, then, upon calculation of capabilities and strength of motive, it moves to life-force and purpose. When subsequent imposition action occurs, its peculiar causes eventually link with desired effects. This connectedness can occur in other cells. Imagine the snake-like curvature spreading connections of causes, connecting links to effects. We can see the curvature and understand its relationship to both connections and causes and effects. Our minds react with shock from understanding its many faces, appearances, and disguises. We grasp at and catch the shimmers and gleams of force, energy, masses, and velocities that empower seemingly unimportant actions as they become significant outcomes of action (their home being the-cause-link-effect construct) owing to the strength and power racing about throughout cells, connections, in the cells under our examination. As the action's energy reaches out, their connectors grasp and shape thinking and decisions. They reach out by way of the moving snake-like curvatures across several Vertical Domain Silos, they rupture the membranes encasing Horizontal Levels of Conflict Troughs.

To perform this mental function of connecting like and disparate things and events, one thinks integratively.³⁴ In a figurative way, we can enter vertical domain silos to understand the parts and pieces of each of the elements within the silo that resides with potential to act either sequentially or simultaneously, alone, but better as a coherent whole. As pearls of rain appear on the strands of a spider web, we can imagine appearances showing horizontal and vertical connections, down, across, up and down in the matrix. Like the spider, effective ISR knows when something disturbs the whole that is the spider web. The connections occur when people act out a sequence, first mentally, then physically, knitting the parts and pieces of disassembled elements into similar and dissimilar wholes. With such knitting, one can cross the horizontal and vertical lines comprising the seemingly invisible, but real all the same, boundaries of one or more cells in the matrix. As one knits the aggregates together, they form into wholes. Micro-wholes integrate into macro-wholes. Macro-wholes originate as singular, then as aggregated cells of horizontal and vertical intersections. With this understanding of the probability of connectedness, one can understand the power I claim to reside in the Matrix War concept.

Complicated, yes, but elementary for fighting and winning in wars of wits and mental combat in purposeful multi-domain struggles over *will*. This kind of struggle occurs now, and it is only going to intensify! I know you can see the complexity of Matrix War. I know you continue to understand the shapes, energies, actions, connections, and spread of outcomes within and outside of the cells where action is about to occur, occurring, or the fallout after the fact. Matrix War, the coming multi-domain conflicts, the speed of actions occurring in vertical domain silos, the effect of actions moving up and down through and in the horizontal levels of conflict troughs, demands holistic, high-quality, and synchronized thinking. Such a situation calls for our thoughts to blend with synthetic contexts, move with specially programmed avatars, enter (virtually) powerful linked computers and their storage and peripherals (this is surrogate travel in virtual reality),³⁵ virtual knowledge environments, and knowledge centers. To top off all

³⁴ Integrate-merge into a whole, collective, combinatory.

³⁵ Wayne Michael Hall, *Stray Voltage War In The Information Age* (Annapolis: Naval Institute Press, 2003), 153-154.

of this, we have to understand how our thinking and actions relate with one of Clausewitz's admonitions:

The first, the supreme, the most far-reaching act of judgment that the statesman and commander have to make is to establish by that test the kind of war on which they are embarking; neither mistaking it for, nor trying to turn it into, something that is alien to its nature. This is the first of all strategic questions and the most comprehensive.³⁶

The various tools available in multi-domain conflict suggest the importance of artificial intelligence and advanced hardware/software avatars our engineers either have or need to build. Artificial intelligence empowers avatars to come to 'life' driving and supporting command and control, wargaming the adversary's wargaming, anticipating his cause to link to effect actions giving our leaders the opportunity to preempt, and sagely attack or manipulate his co-evolution, adaptation, and recursion cycles. This is not to say deep thinking is archaic, nor is it saying that the human being in conflict has to make decisions with data instead of knowledge. I do say that our minds must learn how to think deeply and quickly, to understand the phenomenon of Matrix War with its connecting arteries running throughout a conflict, its start, its action, its operational context, and its conclusion.

As we look, we see, a force, an apparition, a spreading energy. It isn't still; it constantly reaches out and connects as gossamer to unlike and similar activities and events, parts and pieces, people and their organizations, data, data conduits, sensors, computers, knowledge, virtual knowledge environments, missiles, command and control systems, cyber-attacks, artillery fire, tanks and armored personnel carriers, SAMs, SSMs, cruise missiles, drones, weapons of mass destruction, IEDs, ambushes with machine guns and rifles, kidnapping, assassinations, terrorism, propaganda, social network websites and attacks via narratives, and the like. These parts and pieces, happenings, people, organizations, weapons, communications, etc., may seem disparate and inconsequential. But know well, they all connect-all of the pieces matter and they connect in Matrix War.

³⁶ Clausewitz, 88-89.

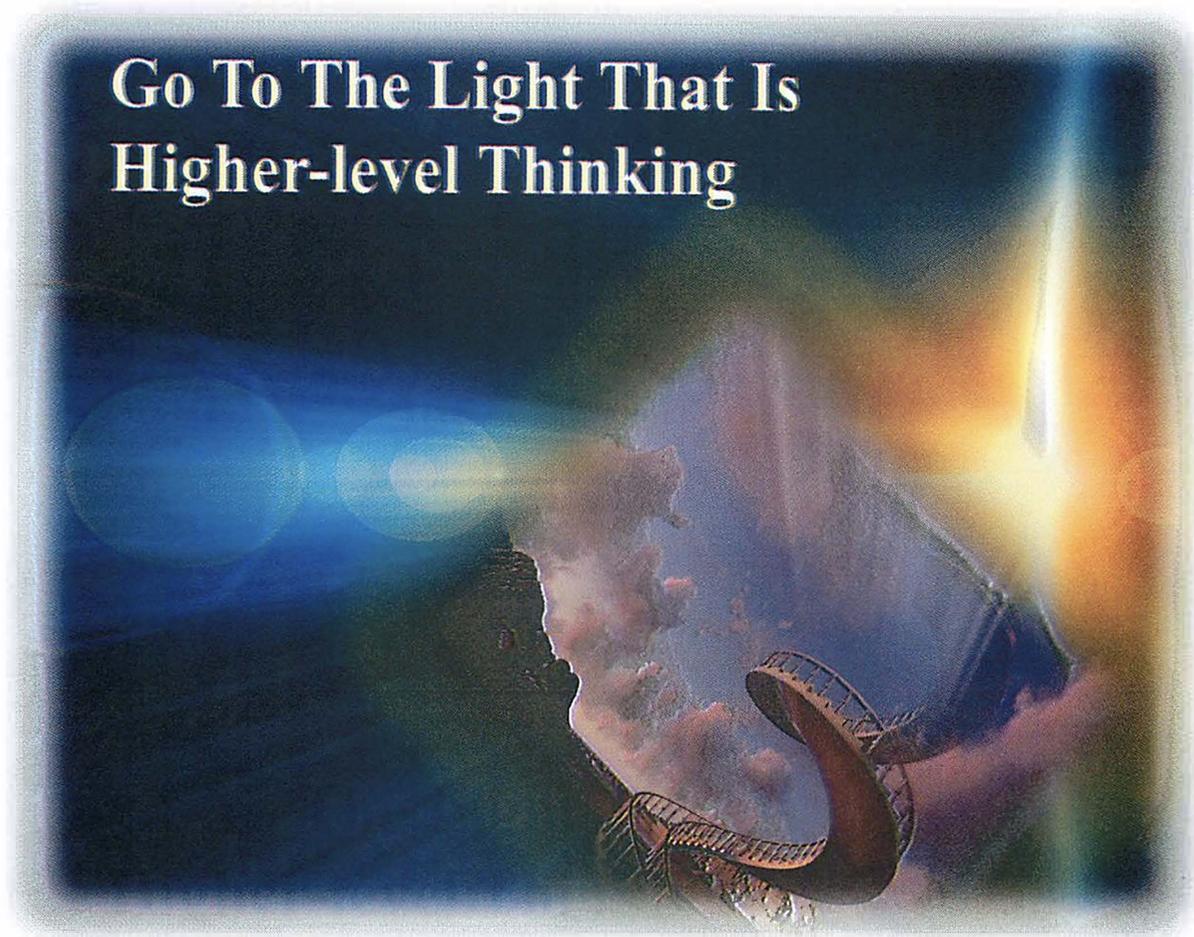


Figure 27. Closing Thoughts

By now, I trust that readers of this primer have a firm grasp on a self-evident, fundamental idea-*will is the central idea of any conflict*. Also, I'm confident that anybody who reads this primer or the book of *will* knows this aphorism-without a struggle for dominance of *wills*, conflict cannot exist. With these thoughts in mind, I'm certain you agree with this statement: Anybody in a conflict and wanting to win must study and learn 'how to think' about *will*.

It is easy to understand that 1) our thought waTiors fight bouts of mental combat for achieving superiority of *will-such* fights constantly occur; 2) mental combat unfolds into wars of wits; 3) *will* is central idea of conflict; 4) learning how to think about *will* is difficult but important; 5) America's thought waTiors need to learn how to think about *will*; 6) both military and civilian institutions of higher learning need to insert *will* (definition, concepts, praxis) into their curricula.

For these reasons, it follows that our minds, organizations, and machines must prepare for multi-domain, asymmetric, and conventional conflict or a combination of these three and the challenges they bring. Our cowltry needs to impose its *will* on multi-domain oriented adversaries while knowing with certainty, very smart and determined adversaries plan to conduct multi-domain attacks to affect, lessen, and dominate our *will*. To deny these premises would be wrong.

Thus, we must learn to resist our enemy's imposition of *will* by outthinking him and possessing capabilities that help us abide by what Teddy Roosevelt used to say-speak softly and carry a big stick, which always helps.

To this end, I conclude by asking you to read and study my book. If you don't have time to read the book, read this primer. Its knowledge and ideas will move you along the path to proficiency in mental combat and the mental capability to enable America's *will* to ascend over all other countervailing ideas, desires and efforts. America needs thought warriors and decision-makers who prove fully prepared to engage in mental combat and win-against any foe. Mental readiness comes with reading and studying *will* as I present in this primer and reading and studying my book, *The Power of Will In International Conflict*. Following your study, derivative benefits accrue in people and organizations thus furthering the longevity of America's power.

Now, as a parting request, dive into what I have given you on none other than the subject *will*. And here is a list identifying some of the important thoughts about *will*. They include in pegboard form the following:

- attack and defeat the enemy's plans at their inception,
- importance of aggregation theory,
- importance of co-evolution,
- importance of adaptation,
- importance of CAS,
- importance of attacking the enemy's recursion,
- entree to the adversary's mind's eye,
- using the adversary's culture
- comprehend how culture's rules shape and control action models,
- conflict in the information and cognitive domains,
- thought models,
- 'how to think about *will*,'
- nonlinearity in operational contexts,
- 18 considerations of nonlinearity,
- 18 considerations of *will*, wargaming the adversary's wargaming,
- 13 steps in thinking as a CAS,
- 36 elements of strategic outcome to outthink America's thought warriors, outthinking the adversary by wargaming his wargaming,
- Importance of Matrix War.

In this kind of war, thinking proves preeminent. Knowing and understanding 'how to think' proves to be the key ingredient in thinking in conflict of *wills* that move and cause change at a dizzying pace. Battles over truth, narratives, veracity, facts, evidence, etc., follow. Nonlinear episodes also contribute to the complexity and alacrity of happenings in the operational context as data moves quickly, causing all sides in a fray over *will* to adapt quickly, change quickly, and speedily discern fact from fabrication. Decision-makers must understand what fighting for ascendancy of *wills* means-to do so, they must read this primer and my book of *will*. They must attack the right way, at the right place, at the right time, with the right purpose to win in 'this kind of war.' Winning clashes of impositions of *will* starts with the intellect. A great intellect

thinks as the adversary thinks and beats him by attacking and *defeating his plans at their inception*. It is a unique way to impose my *will*, yet its genesis comes from reading Sun Tzu and answering the question: How would I attack the enemy's plans at their inception? I have discussed this need with you as a leitmotif in this primer and it appears in more depth between the covers of my book, *The Power of Will In International Conflict*.