Shifting To A Parallel Universe In A Former Time

Information In Conflict: Potential Power Deriving From Disciplined, Deep Thinking

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INTRODUCTION

Information is power. We all seek it. The warfighting skills of the Mongolian Horde, the Muslim Armies of the 13th century, Stonewall Jackson's Army, WWII Wehrmacht, George Patton's 3d Army, Israeli Army of 1967 and 1973, and the Red Army of the 1980s depended on information. All these armed forces relied heavily on reconnaissance to obtain the information for focusing combat power.

Information is the goal of all reconnaissance operations. No less than in the past, present and future commanders will depend on information to make decisions in war. Information for gaining an advantage will be present on any future battlefield. But commanders must be aggressive enough to obtain it, bright enough to discern rapidly its meaning, and incisive enough to use it to focus their combat power.

In the business world, information is important, too; generally, businessmen use legitimate and ethical means to obtain it. If businessmen cheat and lie to obtain information, social ostracization and possible jail terms await them -- not so in the world of war. During war, every method, ploy, and deceit is acceptable because lives are at stake, and winning or losing has significant influence, stretching far into the future, on the lives of countless people. The ethic and ethos of war allow commanders to obtain information any way they can.

The U.S. Army has a variety of ways to gain information. For example, our Defense Department's technological capabilities enable us

to prowl every corner of the earth for information. With imagery intelligence (IMINT), we can vividly see, with some constraints, events as they are happening or have recently occurred. With signals intelligence (SIGINT), we can hear people talk (communications intelligence--COMINT), locate them with radio direction finding (RDF), or detect their radars (electronic intelligence -- ELINT). These capabilities stretch vertically from the divisional Combat Electronic Warfare Intelligence (CEWI) Battalion to national intelligence agencies.

The troubles with this wondrous technological prowess are fourfold. First, because we can use technology to collect information, we often fail to recognize technology's limitations. Technology depends on people talking and cooperating with us by basically doing foolish things such as giving away locations or discussing intentions without secure communications. The quality and timeliness of technological intelligence collection often depend on volatile and uncontrollable weather and terrain variables. Further, technological intelligence collection is accomplished through the use of "dumb" machines -- these machines can be fooled. Machines cannot use data to plan or execute deception; only the human mind is capable of deviousness.

Second, mental atrophy from overdependence on machines can affect people who collect intelligence collection. Machine-induced mental laziness is common. Minds have to be active to be effective. If we overrely on technology, our minds will become, without equivocation, inactive.

Our machines and technology are well-suited to finding out about physical types of enemy activity. Our machines depend on the opposition to talk, to move, to shoot, and to leave vital organs exposed. In the parley of military intelligence, our technology can locate, sometimes with astounding accuracy, artillery firing (shooters), radars emitting, and radios transmitting (emitters). Our technology, though, has difficulty locating enemy command posts (sitters) and determining enemy intentions. Technology fails to understand the shade, hue, and ambiguity inherent in a world populated by intelligent human beings.

Third, our technological prowess has far outstripped our human intelligence (HUMINT). Recognizing our weakness is simple; discerning why we are weak is another matter. Part of the answer is embedded in our culture. Americans generally like to win fair and square without unfair advantage over any opponent. Otherwise, the "thrill of victory" becomes seriously diluted. Gaining information through technological means is fair. But gaining information through HUMINT seems unfair -- and unsavory.

Fourth, our attrition-oriented Army is another weakness. Entire generations of Army officers and the civilian leaders we serve are used to having masses of men and materiel at their disposal to ensure victory. Who needs a workable, all-source information gathering system when we can out-kill any opponent? AirLand Battle doctrine -- champion of maneuver warfare -- and an increased focus on relatively unsophisticated foes has exposed a dramatic gap in requirement versus capability. In short, we need tactical reconnaissance operations.

The United States' machismo orientation is a related weakness; relying on brute strength has made our society confrontational and violent. HUMINT provides the capability to get into an opponent's head, so to speak, which robs us of the potential for a violent and cataclysmic death struggle. The current struggle in the U.S. Army's armor community over the role of the cavalry on the AirLand battlefield is an example of machismo versus HUMINT.

A few years ago, some far-thinking person posited and sold the idea of a true reconnaissance force for the U.S. Army Cavalry. Its mission was to gain HUMINT, not to become decisively engaged. To ensure compliance with the mission, the Army took away the cavalry's tanks. But the cavalry's hue and cry was overwhelming, showing its displeasure at being relegated to a seemingly impotent, non-killing role -- unfit duty for true men of action. No argument for being without tanks makes sense to the cavalry man who wants to close with and destroy the enemy. The arguments of smart-kill, effective focus of combat power, teamwork, and all-source intelligence collection pale in comparison with the cavalry's primordal urge to kill.

These reasons for our acute failure to use reconnaissance and operations effectively for collecting information will seem plausible to some, but offensive and fallacious to others. To those denying the plausibility of these reasons and to those who deny the presence of a problem, the following thought seems particularly apropos, "the one who practices self-deception is hiding a displeasing truth or presenting as truth a pleasant untruth...in self-deception, it is from myself I am hiding the truth."[1] Let's be honest with ourselves. Let's dispell the

tartufferie and apply the knife vivisectionally to the customs and traditions that shroud truth. With such examination, we find that we do our Army and our country a great disservice through our repeated failure to improve our understanding of information and the means by which we provide information to decision makers. In particular, understanding information and the means of obtaining it -- reconnaissance -- will help our commanders make better decisions. Simultaneously, commanders can avoid being surprised by an opponent, while improving the capability to achieve surprise.

We have a problem accepting the viability of tactical reconnaissance operations, and we have had this problem for years. The most vivid effect of our failure to accept the validity of tactical reconnaissance operations is apparent in our soldiers' training. We fail to train our soldiers to conduct adequate tactical reconnaissance operations. Responsibility for correct focus and desired information often is diffused. Further, reconnaissance assets, such as scouts, often have roles other than reconnaissance. Generally, if we visit a tactical unit when it is planning and executing a tactical reconnaissance operation, confusion and ineptitude are the rule rather than the exception. Rarely do we see the commander, S2, S3, FSO, and engineer working through intelligence preparation of the battlefield (IPB) and using IPB's inherent logic to focus intelligence collection and combat power effects. As a result, chaos reigns supreme and the unit's efforts to collect information are diffused.[2] As an end result, troops go through the motions of collecting information, but often their collecting efforts are meaningless and impotent. We end up

trying to kill everything rather than only that which is important to the enemy commander.

We must improve our tactical reconnaissance operations to execute successful combat operations at all levels of war and in all intensities of conflict. Now is the time to do so. The gods of war will not forgive our failure to improve ourselves in this area. We got away with occasional gross incompetence in WWII (U.S. Army's surprise in 1944 at the Ardennes), but we will not get away with it today. Just wait until we aren't receiving any SIGINT or IMINT, then try to fix our reconnaissance capability -- the repair cannot happen.

Theory of Information

Information provides the capability to know, to understand, to judge, to predict, to decide, to alter plans, and to intuit. That information is power cannot be denied. But, on the other hand, how much and what kind of information an individual needs for making decisions is a serious topic for debate. Some people must have information, and a lot of it, to make decisions. Others, though, with little information can intuit, leap boldly to a conclusion, and see accurate images in the mind's eye. To these people, information supports intuition, then translates intuition into meaning.

Information is a means to an end; without purpose, however, it is useless. The ends that information serves come in three major forms. First, thinkers can readily see the end before the means (information) is gathered or enacted. In deductive reasoning, information (the

means) can justify, prove, buttress, or elucidate an end. Second, if the end is less obvious, using information (the means) can build toward an end or ends that are vague and whose outcomes are undefinable at the start. In this situation, information is the means for finding the end -- to prove or disprove a hypothesis or hunch. Still yet, information can also convey meaning and provide proof for an end arrived at through nontraditional means -- intuition.

Leaders must determine their need for information, then make their needs known to subordinates, translating their needs into clear, concise information requirements. In theory, subordinates should know and understand how their leaders think to understand informational needs. But leaders (or anyone else), rarely understand their own way of thinking, let alone own their information needs. Further, because of ego problems, leaders are sometimes reluctant to admit needs, and do not want their subordinates to understand how they think and what their precise information needs are. Admitting a lack of knowledge might indicate weakness, an unacceptable situation to many leaders.

Thus, many leaders want all available information regardless of whether or not their subordinates, machines, or organizations can obtain any meaningful conclusions from masses of bits of information. This type of leadership causes several effects. First, the quest for all available information is, in reality, the quest for absolute certainty, which is in direct conflict with the Army's doctrine, requiring leadership that is comfortable with ambiguity. What is reality and what we need are incongruent. Being uncomfortable with ambiguity permeates our organization, makes it conservative, and causes

some of its members to be pusillanimous.

Because of technological advances in collecting and processing information, many leaders believe obtaining certainty is possible. So they try to obtain all information in the hope of finding the bits and pieces of information they need. A flood of information though, leads to laziness and atrophy, perhaps even entrophy, of thinking skills and intellectual activities. We become used to searching through masses of information for the elusive box housing the "genie" who pops out of the box and tells all. This phenomenon, "the genie phenomenon," leads to a distillation of thinking prowess, which becomes apparent when we lack information or when we need to apply understanding to a large number of disparate bits of information.

Lastly, the urge to gather every scrap of information diffuses subordinates' intellectual capabilities and technology by wasting much time trying to collect and understand everything. We simply have neither the collectors nor the processors to collect and to process everything. Thus, leaders must define their information needs based upon the end they are after, assess the means of collecting and processing information, and focus time and other resources on a few critical informational needs rather than attempting to satisfy their insatiable appetites for information.

Perfect information is impossible to find because nothing we do, or know, or intuit, is perfect. Information can be inconclusive, deceptive, or unrelated. But severe distortion can also occur in the means of collecting information. Even the most sophisticated means we possess to collect information, human beings, have weaknesses that

alter the very information they have collected.

Human beings look at information through the prisms of their eyes and the apperception of their minds. Apperception stems from the conscious and subconscious. Countless conditions, ideas, prejudices, fantasies, emotions, and values subconsciously conspire to rob the brain of perceiving information accurately. So the human being presents, in all its glorious capability, a paradox. On one hand we have the wondrous capability to think. But the ability to think causes an insatiable appetite for information; our brains tell us to gain more information to get closer to perfect knowledge. Influences on the brain itself distort what we see and hear, depriving us from achieving perfect information. The phrase 'perfect information' is an oxymoron, but still serves as fuel for the quest.

Even if the brain receives reasonably accurate information, that information has to withstand the rigors of processing, which occurs either consciously or subconsciously. Conscious processing is influenced by how we think. Then we have to draw conclusions. Depending on whether a person is right- or left-brain oriented, decisions or conclusions have varying degrees of accuracy. Accuracy depends on the type of information received and how the person processes the information. To a right-brain person, for example, errors could occur in logic because of shortfalls in mathematical or linguistic capabilities inherent to functions of the brain. Left-brain thinkers, on the other hand, could distort information as it relates to other things and to wholes because these people tend to see everything in microscopic, logical connections and black and white answers, a

serious shortcoming in a world full of hue and ambiguity.

Making decisions without relevant information is comparable to a person trapped in a large, pitch-black, silent tomb. Without light, the individual gropes blindly to feel the interior of the tomb to gain information for discerning the possibility of and the means to escape from the tomb. No natural bodily adjustment, e.g., eyes' adjustment to darkness, hearing perceptiveness, helps -- the tomb is too dark to see and too quiet to hear. One ray of light though, which could be construed to be one piece of information, could help the individual "see" a portion of the inside of the tomb. The groping could, therefore, become more focused. Several single rays of light could light up enough of the tomb to enable the entrapped person to stop groping altogether and then to make a concerted assessment of the inside of the tomb. The trapped individual does not need the entire tomb to be basked in light (perfect information). The prisoner only needs enough single rays with which to assess the inside of the tomb and to decide how to escape, if indeed, escape is possible. If the entrapped person waited for the entire tomb to be basked with light because of the presence of a few rays, mental and physical paralysis could result. This inactivity could be fatal if speed of decision making correlates with chances for escape.

Commanders need information to make good decisions. They do not, however, need all available information to make decisions. Commanders need relevant, accurate, and reliable information, a simple concept often complex in reality.

Information gathering, such as intelligence collection, helps

bring the individual closer to reality, hence to understanding enough of the environment to make good decisions. But what if, in reality, the decision maker either discards available information or fails to comprehend it? The individual's decisions are based on either wishful thinking or fantasies. Griffith's paraphrasing of Mao Tse-tung's thoughts vividly capture this concept:"The data gathered by observation and from reports are carefully appraised; the crude and false discarded; the refined and true retained...A careless one bases his military plan upon his own wishful thinking; it does not correspond with reality; it is, in a word, fantastic."[3]

We can conclude from Mao's thoughts that we must use information to come closer to understanding reality. We can also conclude, though, the human mind is fraught with foibles that distort reality, regardless of how objective the information is.

Our subconscious also influences information our minds receive -- that portion of our being whose presence is a penumbra, which we feel but does not become manifest except in dreams, fantasy, and flashes of insight. The subconscious is, in effect, a cornucopia of ideas, influences, predilections, biases, prejudices, desires, fears, and needs. All these factors, buried in the nonreality of the subconscious, affect and, in fact, distort reality because the subconscious is the primary protector of the ego, which is the principal protector of the self.

Then too, the source providing the information distorts the information. Whether information collection is through human or technological means, it still does not accurately represent reality.

For example, natural elements such as clouds, precipitation, atmospheric conditions affect collection through technological means. Deception, and normal limitations of machinery are other limiting factors. After information is collected, human beings have to interpret it. Thus, when information is processed, the person applying meaning to it distorts it. Some argue that objectivity -- just considering the facts -- overcomes human bias. This logic is fallacious. As long as human beings interpret information and attempt to apply meaning to it, subjective assessment is the rule because our conscious and subconscious condition each of us. Even the scientist in a controlled experiment interjects a personal perception onto the experiment through selecting the experiment's topic, statistical design, data interpretation, and drawing conclusions and implications. Intelligence analysts and commanders are no different except that the passions inherent in war influence their thought processes.

Without question, we need to gather information to help us make decisions. Two facts, however, alter the way we view information. First, we do not need perfect information to make effective decisions -- we only need information relevant to the desired end. Second, we cannot know true reality; thus, we cannot gain certainty. But human nature continues the quest. We want all information. We want certainty.

Part of this dichotomous tension lies in word usage. We use, for example, the word 'know' much more frequently than we use the word 'understand.' To 'know' is much more concrete than to 'understand.' To 'know' implies we know perfectly; otherwise, we would place a

modifier before the word know, e.g., partial knowledge, imperfect knowledge. The word 'understand', which implies comprehension of relationships, is preferable when dealing with an imperfect world. We could, for example, understand how our opponent thinks, but we might not know how he thinks. The word 'understand' leads us to reject the rigidity of black and white, yes and no, good and evil. Instead, the word 'understand' connotes awareness of hue, of perception, of ambiguity, and of frailty. These concepts dominate the world; sharp and clearly understood contradistinctions, for the most part, do not exist. Thus Sun Tzu's famous dictum is more understandable if he would have said: "Understand your enemy and yourself and you will never be defeated in a hundred battles."[4]

We can view information in a purely theoretical sense, and similarly we can view perfect decisions as a result of perfect information. Perfection gives us the boundaries of the ideal; constraints inherent in nature and in human beings degrade perfection by varying degrees. Constraints degrading the theoretical ideal help us understand an approximation of reality. Once a constraint analysis is complete, we can start understanding the volume and the quality of information we can reasonably expect to gather and process.

We must remember several important ideas along this line of thinking.

- o We need information, and to fight wars without it is grosslyy negligent.
- o We need neither all information nor perfect information.
- o We need to focus only on the information we consider

essential to the end.

o We need to focus, within constraints, our means of collection to gain maximum knowledge and understanding.

o We receive only bits and pieces of information even under the best of circumstances.

o We must recognize the numerous distortions that constrain the theoretical ideal.

o We must view the enemy's information gathering and processing in the same way. Without such a relational assessment, we cannot conduct effective deception.

Information does not magically appear because we will it. Often, we have to contend with an intelligent and interactive opponent, our own intellectual and personal limitations, distance, terrain, weather, communications, and collection constraints to gather information. Jomini's thought helps clarify this concept, "When he [the commander] has opposed to him a skillful, active, and enterprising adversary, whose movements are a perfect riddle, then his difficulties begin..."[5] Thus, we must be creative in designing plans for information collection and we must have initiative, aggressiveness, and perseverance in its pursuit. Sun Tzu offers an insight into the art of war that helps us understand this line of thought. Sun Tzu says, "the reason the enlightened prince and wise general conquer the enemy whenever they move and their achievements surpass those of ordinary men is foreknowledge."[6] Sun Tzu was not talking about military geniuses who have surfaced in every age; he was talking about intelligence collection. Sun Tzu went on to say, "what is called foreknowledge

cannot be elicited from spirits, nor from gods, nor by analogy with past events, nor from calculations. It must be obtained from men who know the enemy situation."[7] He was saying we have to work hard to obtain information.

Principles of Reconnaissance

Principles are great guides for thinking through difficult problems. They are neither immutable nor dogma. The principles of reconnaissance are a means to an end; they are an aid in thinking about abstruse subject matter. Thus, both commanders and staff officers can use the following principles to assist in planning reconnaissance operations.

Principle 1. Information must be timely. The only way information is effective in war is if it is timely; outdated information is only good for historical purposes. This apparently simple point, while simple to understand, is complex to implement. The timeliness of the War Dapartment's warning to Admiral Kimmel and General Short just before the attack on Pearl Harbor is a good example. What would they have done differently if the information about an impending Japanese attack had been timely? Perhaps they would have discarded the information as irrelevant or unreliable, but perhaps they would have moved the fleet to sea and manned their aircraft and anti-aircraft guns. Perhaps the United States would have won the war at Pearl Harbor rather than suffering a devastating and humiliating surprise attack.

Several aspects of information collection often cause tardiness.

o One problem is multi-layered bureaucracy. Generally, information is recorded, processed, analyzed, and turned into a report before forwarding it to the next level.

o Analysis can take significant time. The Air Force aerial reconnaissance system, for example, often takes too much time to process and to analyze information. The result is historical, not timely information, meaningless to the tactical commander. Sometimes the environment prohibits timely transmission. Atmospheric or enemy interference might disrupt communications. Lastly, the frailty of humans can preclude the timely transmission of information. People can fail to recognize critical data, be indecisive about presenting their thoughts, forget what is important to whom, or be unaware of the importance of timeliness to the soldier engaged in combat.

Tactical commanders need information timely enough either to kill the enemy's soldiers or to break his equipment. In an engagement or battle, the lower a soldier is in a tactical organization, the more critical timeliness is. At the squad, platoon, and company levels, events proceed quickly; therefore, information is relevant only to the extent that soldiers can act on it. Sometimes soldiers have only a few seconds in which to make a decision and to act; otherwise, they will die.

The higher a soldier is in the organization, the more forgiving the gods of war are about timeliness. But even at the division level, the targeting system must act quickly to focus lethal and non-lethal weapons because information about the enemy is often ephemeral. The

battlefield at this level becomes detached from reality in that maps, computers, and reasoned decisions take the place of hurried battlefield conditions, chaos, and passions of war. The enemy becomes, at high levels of command, a phantasm real only to those on the ground, not in the minds of planners and operators. Thus, timeliness at the division level is measured in terms of minutes as opposed to seconds prevalent at lower tactical levels. Corps and higher headquarter elements plan one or more days in the future; therefore, this echelon is concerned less with precise and timely information that with comprehensive information that helps discern patterns, objectives, and possible courses of action (figure 1). In short, operators and planners need information with which to make predictive decisions; battlefield soldiers need information for making immediate decisions.

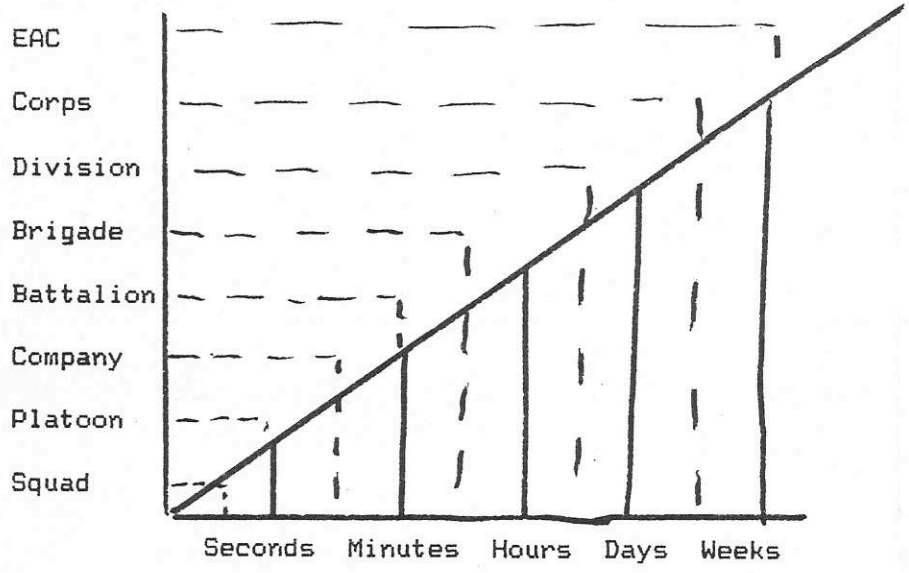

Figure 1. Timeliness of Information.

Principle 2. Reconnaissance operations must be aggressive. Information awaits those bold and resolute enough to obtain it.

Information is absolutely critical for achieving and retaining the initiative; passivity never yields the information with which to win. Along with aggressively pursuing information, comes risk. Risk is inherent to the term aggressive. Thus, our soldiers and machines are at risk when we pursue information aggressively. Aggressive people, well schooled in the art and science of war, plan and implement aggressive reconnaissance operations. They desire to find the enemy, kill his people, break his machines, and render his will incapable of further effort. Aggressive people treat reconnaissance as an interactive duel -- a subset of combat -- and know their aggressiveness interacts dynamically with the enemy's aggressive reconnaissance operations. The struggle is for the most timely and accurate information. To the victor of this struggle belongs the initiative. Those who possess initiative have the potential to win. Aggressive pursuit of information enables commanders to have the information requisite to make decisions to obtain and retain the initiative.

Information does not appear through magic; it requires aggressive pursuit. Gathering information is similar to everything else in war -- its travail is both physical and intellectual. In fact, information strongly influences initiative. The struggle for information is interactive and the results are often lethal to one side or the other. The side that gains valid information and applies it before the opponent wins. In war, no consolation prize exists. The conclusion, from a theoretical perspective, is that we must have aggressive reconnaissance and surveillance operations actively seeking information the commander needs to make decisions.

Principle 3. Reconnaissance operations must be continuous.

Reconnaissance operations must seek information day and night, 24 hours per day. Leaders from the squad to the army level must plan and execute reconnaissance operations continuously. Fickle fortune plies her favors ephemerally. Thus, if our leaders let down even for a moment, the struggle for information -- control of initiative -- could swing back to the opponent. Traditionally, the U.S. Army has not done well in night reconnaissance operations. But, thanks to the advent of technology in night-vision devices, our experiences at the National Training Center (NTC), and the capabilities of our erstwhile opponents -- the Soviets -- to conduct reconnaissance operations, the U.S. Army is showing signs of life in this vital functional area.

Principle 4. Reconnaissance operations focus combat power.

Reconnaissance operations "pull", so to speak, maneuver, fire support, and movement. Further, reconnaissance operations provide information for fighting smart and for fighting in concert with the precepts of maneuver warfare. To borrow from B.H. Liddell Hart, reconnaissance operations gain contact with the enemy and then find weaknesses and vulnerabilities to strike at the enemy's soft spots, using an indirect approach.[8] Reconnaissance operations gathering information vital to the commander's intent relate to the enemy's centers of gravity, critical vulnerabilities, or high payoff targets (HPT). But we have neither the reconnaissance assets nor the combat power to find and to destroy all enemy activities.[9] By using reconnaissance assets to pull fire and maneuver, we are enacting principle 2 and striving for information to execute combat operations smartly.

Principle 5. The most effective reconnaissance operations are secret. Secrecy is an intangible but powerful weapon. When we conduct reconnaissance operations secretly, our opponent does not know that we know where he is and what he is doing. Secrecy in reconnaissance operations provides the commander with a powerful option -- the chance to dominate the opponent in the physical and moral domains of war. Physically, secrecy means the commander can catch the opponent by surprise and destroy enemy soldiers and break enemy equipment with the least cost to his own soldiers. In the moral domain of war, secret reconnaissance operations enable the commander to dominate the enemy's will. Information obtained secretly enables the commander to make decisions that anticipate and manipulate the enemy commander. In effect, secrecy enables the commander to garner control of the collective will of the enemy and through that control to seize and retain the initiative. If, on the contrary, our reconnaissance operations operate without regard for secrecy, they obviate any advantage surprise offers. What enemy wouldn't respond differently if he knew the opponent was aware of a chosen course of action?

In essence, the thrust of all countermeasure (active) operations is to deny enemy commanders information and to destroy the enemy's potential for obtaining information without our knowledge. Our NTC offers ample testament for a substantial advantage to the side that obtains information secretly and uses it to catch the opponent by surprise. There, the dynamic between the forces of reconnaissance is at its most transparent.

Principle 6. Reconnaissance operations must provide accurate information. This principle does not advocate a requirement for perfect information, but for information as accurate as its intended use dictates. Information to direct artillery and close air support, for example, must be highly accurate. Information cuing other sensors, such as side-looking airborne radar (SLAR), requires little accuracy. Criteria for accuracy fuses with the requirement for the information to drive collection. Leaders must select reconnaissance assets accordingly. Even then, foibles of the human mind cause inaccuracies that are factors in the way we use the information.

Information for fire and maneuver decisions must have accuracy enhanced through filters. For human reconnaissance assets, filters promoting accuracy come from training (tactics, organization, doctrine, enemy equipment), and raw intellectual capability. Accuracy filters for mechanical means of reconnaissance are part of the system itself, e.g., lens, microchip, computer logic, man/machine complementary interface, machine/machine complementary interface, and noise filters. Moreover, the receiver of information must be aware of distortions the collector, environmental conditions, and distortions in the receiver cause. In fact, Clausewitz calls all intelligence friction because unexpected chance events drive it and because people tend to distort truth, particularly in trying times such as reporting information during battle.[10]

Principle 7. Reconnaissance operations must be complementary. Accuracy dramatically improves if the means of collection complement each other. Each collection asset has strengths and weakness. Often

though, the physical characteristics of one means of information collection complement the weaknesses of other means of collection. Balance is the key. Leaders must plan and conduct reconnaissance operations to balance and complement each other.

Along with assisting in the quest for accuracy, complementary information collection assets help reduce the potential for deception. If we rely on one means of information collection, we stand a good chance of being deceived -- the enemy probably has a good understanding of what we rely on as decision-making information.

The great risk is that we could waste time being indecisive while waiting for systems to complement each other to produce "completely" accurate information. But if we attempt to obtain balance in information collection, if we understand that perfect information is unavailable, and if we understand that our brains help us obtain wholes out of bits and pieces of information, aggressiveness, not inactivity, will rule.

Implications

War in the future demands effective reconnaissance operations. Reconnaissance operations provide information. Information is power. Power enables us to impose our will on our opponents through destroying either people or machines, or manipulating will. Yet, from a macro perspective, reconnaissance operations in the U.S. Army have only a remote chance of improving. We understand that all successful armies use effective reconnaissance. We have seen the tremendous benefits of

reconnaissance at the NTC. Further, we understand how much the Soviets, and other antagonists, rely upon reconnaissance for their decision making. Yet, as a recent Rand Corporation study so ably posits, the U.S. Army is weak in reconnaissance operations.[11] We neither teach it to our intelligence personnel nor practice it adequately in the field. Commanders, their S2s, and their S3s generally don't have the foggiest notion of how to plan and to execute effective tactical reconnaissance operations. Through nobody's fault, we often have the blind leading the blind. Vague apprehensions and conditions of uneasiness affect all of us, but we do nothing. Periodically, an expert in reconnaissance surfaces but submerges again after an FTX or NTC rotation ends. Until we think about information and reconnaissance and inculcate it in our training and education system, incorporate it in our doctrine, and actually use reconnaissance to focus combat power, reconnaissance operations in the U.S. Army will remain basically defunct and impotent.

We must come to grips with why we need information from reconnaissance operations. To develop this understanding, we must realize what our end is -- successfully applying combat power effects. Attaining that end is through successful decision making, which comes from two sources. The first source is a basic understanding of the art and science of war at appropriate levels of command. Second, successful decision making comes from having enough relevant, timely, and accurate information with which to make decisions. But what is relevant, timely, and accurate information? It depends on the information's end use, means of collection, its means of processing,

and how we analyze, synthesize, and disseminate it.

Third, we have to determine how we make decisions, what informational inputs we need for making decisions, and how much distortion occurs during the input cycle. We have to determine how long collecting, processing, and using information takes.

The Soviets, for example, have a highly structured model for decision making. Their structure enables them to define their information needs, the means of moving information, constraints to perfection, and how information fits into their decision cycle. Such rigidity enables the Soviets to define explicit roles and requirements for their reconnaissance assets. The shortfalls of such a system are its tendency toward rigidity and over-reliance on quantification. Moreover, it enables an opponent to make fairly accurate assumptions about manipulating information for purposes of deception.

The U.S. Army, on the other hand, has a loose structure for decision making. Some commanders use a structured, estimative process for decision making, others do not. The result is general confusion among commanders and staff officers, and widely disparate methods of making decisions within organizations and throughout the chain of command. In a general sense, we have trouble defining our reconnaissance needs; we often do not know what our informational needs are; we have trouble understanding how we make decisions; and we have difficulty understanding how we think. But our self-confusion does have a positive, an almost humorous, upbeat side: an opponent has a difficult time figuring out how to get inside our decision cycle because we don't have a formal one. Our confusion confuses our

opponents!

From a negative perspective though, we are seldom able to define our reconnaissance requirements. Thus, reconnaissance organizations change with the vagaries of the wind, reconnaissance doctrine becomes mushy, and we spend little time thinking about reconnaissance and the purpose of reconnaissance operations.

War in the future will be highly lethal, at selected locations, and will terminate quickly. Such characteristics cause an overwhelming mental pressure for warriors to make quick and correct decisions. We cannot afford to be wrong in our decision making; potentially devastating results and our inability to overcome the temerity of time to right our shortfalls await. In this respect, we must realize that information is a critical aspect of obtaining a relational advantage over an opponent. Information is an edge, a key for understanding an environment, successfully applying combat power. We must study information, how we collect it, how we process it, and how we use it. We have to provide what we learn from our study to research and development organizations and to force developers to improve ways of obtaining information under the most trying circumstances.

The interactive dynamics involved in the quest for information is critical in the outcome of combat. If we know what information we want in an unconstrained environment and if we have the means to obtain it, we will achieve what we want. But nothing, except in a vacuum, is unconstrained. In a combat environment, the enemy is a principal constraint. The enemy anticipates, then denys our attempts to obtain information. As a further complicator, the enemy is attempting to gain

information and we are attempting to deny those attempts. Thus, an interactive dynamic occurs. To the victor in this struggle goes the advantage in information. The side with the advantage in information often has the initiative and a greater probability for victory. Figure 2 diagrams this interactive struggle.

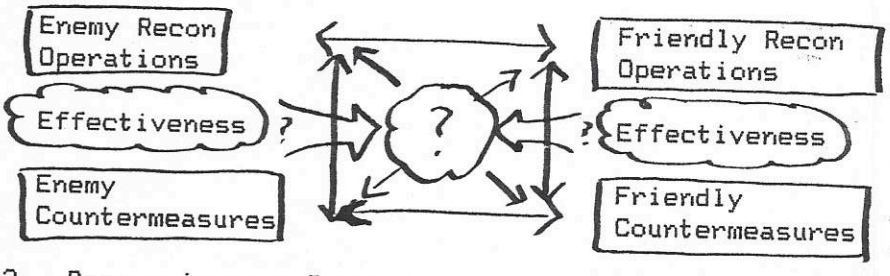

Figure 2. Reconnaissance Dynamic

We often forget the devastating affects enemy information gathering can have on what we want to do tactically. We can go back to WWII and the Ultra secret to see the worth of information from a macro perspective. We only need go to the NTC and watch the significant results of information gathering for the OPFOR to appreciate its significance in a modern sense.

Yet, we remain curiously inept in reconnaissance operations. Perhaps immersing ourselves in the abstraction of dynamic interplay is too difficult. Perhaps our subconscious yearns for a return to simpler days, when the world of war was not so complex.

Regardless of complexity, we must delve into the dynamic and make several decisions. First, we must define our objective and understand what information we need to accomplish it. Second, we must decide how to collect, process, analyze, synthesize, and use the information. Third, we must anticipate an active, intelligent enemy, who seeks the

same information about us as we seek about him. We must understand how he thinks, what his information needs are, and how he receives and acts on information. Fourth, we have to anticipate distortion to include environmental, intellectual, and enemy induced distortion. After we have thought through these functions is when we understand our informational needs.

Conclusion

Our officer corps needs to grow intellectually to be comfortable with ambiguity, and other challenges face it too: being able to act on only a few rays of information in a dark tomb; needing neither complete certainty nor all available information; being aware of information as an end, and reconnaissance as a means to an end, to dispell once and for all the myth of the "genie phenomenon." Magic black boxes do not exist; information gathering is hard, demanding work. Even after hard work, we can only hope to achieve bits and pieces of information. Our officers must understand what their information needs are, how we can obtain the information, and how we can use it to inflict casualties on our opponents.

Further, our officers must understand how they and their subordinates think, and they should understand what their information needs are. Leaders should attempt to balance right-brain and left-brain thinkers, concrete and intuitive individuals, those comfortable with ambiguity and those uncomfortable with ambiguity. In the stress of war, we need complementary thinkers to work together toward the commander's end.

In our egalitarian Army, each must be content to work with the soldiers the system provides. Each of us needs to gain a better awareness of how we think, what information we need, and understand the same about our subordinates. We require balance -- balance in intellects on staffs, balance in selecting collectors, and balance in exploring the dynamics of interaction between us and our antagonists.

Lastly, we need to study reconnaissance. From such study, we need to promulgate age-old principles in our doctrine, teach it to our young officers, and practice reconnaissance in the field. Only through practice can we gain the balance we need to collect relevant, accurate, and timely information.

Endnotes

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2. Wayne M. Hall, "Reflections on a Visit to the National Training Center, " (Fort Carson: Unpublished Paper, 5 January 1987), p. 10.

3. Sun Tzu the Art of War translated by Samuel B. Griffith, (London, Eng.: Oxford University Press), p.77

4. Sun Tzu wrote know your enemy and yourself and you will never be defeated in a hundred battles.

5. Henri Jomini, The Art of War, trans. Capt. G. H. Mendell and Lt. W. P. Craighill (Philadelphia: J.B. Lippincott & Co., 1862), p. 245.

6. Sun Tzu, p. 144.

7. Sun Tzu, p. 144.

8. B. H. Liddell Hart, "'The Man-In-The-Dark' Theory of Infantry Tactics and 'Expanding Torrent' System of Attack," The Journal of the Royal United Service Institution, (February, 1921), pp. 9-10.

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10. Carl Von Clauseivitz, On War, ed. and trans. Michael Howard and Peter Paret, (Princeton: Princeton University Press, 1976), pp. 117-118.

11. Martin Goldsmith and James Hodges, "Applying the National Training Center Experience: Tactical Reconnaissance," (Santa Monica: The Rand Corporation, 1987), pp. 67-69.